PACKAGE engineering

Skin and blister packaging—on schedule

Having to develop, install, de-bug and get production volumes from skin and blister packaging operations—at the same time meeting deadline dates for national distribution of these new packages. (See Page 41)

How would you run the packaging job?

Although "every company is different," there are basic patterns to follow in cutting through confusion about where to put packaging on the organization chart—with do-it-yourself guides to packaging management. (See Page 47)

Choosing the right shipping container

Tests and studies of damage show how moisture-resistant corrugated boxes compare with wirebound crates and bushel baskets for shipping fruit subjected to hydrocooling operations in the package. (See Page 52)

Complete table of contents on Page 2

JUNE 1960

VOLUME 5 • NUMBER 6

Package Engineering
185 N. Wabash Avenue,
Chicago 1, Illinois
Form 3547 requested

PERMIT NO. 234
ST. JOSEPH, MICH.
PAID
BULK RATE
U. S. POSTAGE

Now Scandia has a machine that can "top-sheet" this tray in one second (or less)

The new Scandia "Tray-Topper" employing continuous feed of roll foil is *guaranteed* to apply foil top-sheets to trays automatically at a speed of 60 trays per minute. Thoroughly use-tested by major frozen dinner processors, the "Tray-Topper" operates efficiently over a speed range of 40 to 80 trays per minute.

You deal directly with the machine manufacturer, purchasing your trays and roll foil stock from *any* foil supplier *you* choose to use.

Two years of design, development and production line testing are back of the rugged new "Tray-Topper" assuring lifetime performance under the most exacting plant conditions. And easy cleaning is "built-in."

In selecting the Scandia "Tray-Topper" for your frozen dinner production line, you are getting the product of an experienced builder of high-speed packaging machines with a world-wide reputation for rugged dependability. Call or write:

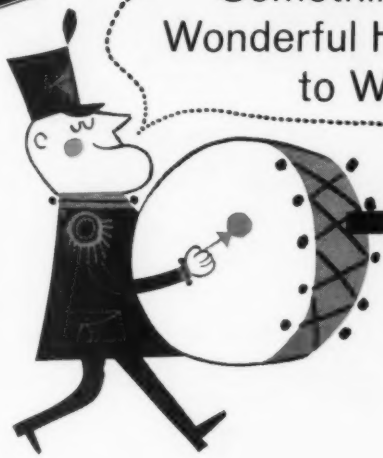
Scandia Packaging Machinery Company,
North Arlington, N. J. WYman 1-8400.

SCANDIA
MEANS CRAFTSMANSHIP

For more information circle No. 201 on Reader Service Card, Page 119

GOODYEAR

Something New and Wonderful Has Happened to Wieners



VITAFILM WNF

Nonfogging film by Goodyear provides smoothest protection ever

Look... No Wrinkles!

Now, from Goodyear, comes another VITAFILM special –VITAFILM WNF.

Made exclusively—and expertly—for wieners, this new film supplies all kinds of merchandising advantages:

Nonfogging – makes a gleaming-smooth, crystal-clear package that reveals quality, and guards it, too;

Positive heat-seal – seals quickly and permanently over a wide range of temperatures;

Dimensional stability – won't wrinkle or pucker under varying humidity conditions;

Excellent machinability – handles easily on automatic, high-speed packaging machinery.

If you're packaging wieners, you'll want all the facts now on VITAFILM WNF. Get in touch with your Goodyear Packaging Representative, or write Goodyear, Packaging Films Dept. R-6432, Akron 16, Ohio.

Lots of good things come from

GOODYEAR

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

JUNE 1960 • VOLUME 5 • NUMBER 6

PACKAGE engineering

AN ANGUS J. RAY PUBLICATION

For your calendar

June 1. Packaging Institute professional member seminar on aerosol packaging:
Statler-Hilton Hotel, New York, N.Y. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Avenue, New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

June 12-25. Industrial Management Center's 7th Annual Materials Handling and Packaging Training Course:
Lake Placid Club, New York. Contact: James R. Bright, director, Industrial Management Center, 56 Robbins Road, Lexington, Mass. *Telephone: VOlunteer 2-4355.*

July 19-21. Western Packaging and Materials Handling Exposition:
Pan Pacific Auditorium, Los Angeles. Contact: Clapp and Poliak, Inc., 759 Monadnock Building, San Francisco 5, Calif. *Telephone: DOuglas 2-7876.*

August 15-19. AMA workshop seminar on package development and engineering:
Colgate University, Hamilton, New York. Contact: John L. Wood, packaging coordinator, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

September 14. Packaging Institute professional member seminar on folding cartons:
Drake Hotel, Chicago. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Avenue, New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

September 28. Packaging Institute professional member seminar on resins:
Statler-Hilton Hotel, New York, N.Y. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Avenue, New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

October 31-November 2. Packaging Institute 22nd Annual National Packaging Forum:
Statler-Hilton Hotel, New York, N.Y. Contact: Charles A. Feld, executive director, Packaging Institute, 342 Madison Avenue, New York 17, N.Y. *Telephone: MUrray Hill 7-8875.*

October 31-November 4. AMA packaging management course:
Hotel Astor, New York, N.Y. Contact: John L. Wood, packaging coordinator, American Management Association, 1515 Broadway, New York 36, N.Y. *Telephone: JUdson 6-8100.*

1961: November 7-10. Packaging Machinery Manufacturers Institute Show of 1961:
Cobo Hall, Detroit. Contact: W. L. Redding, Hanson & Shea, Inc., One Gateway Center, Pittsburgh 22, Pa. *Telephone: ATlantic 1-8552.*

Articles

41 **Setting up skin and blister packaging—in a hurry,** by Clinton Dodds, project engineer, W. A. Sheaffer Pen Company
Fitting in two new operations so that they turn out enough production in time to meet national distribution deadline dates.

47 **Organize: the management of packaging,** by Edwin S. Worden, Edwin S. Worden & Associates
Practical steps to take in examining the company structure and function preparatory to spelling out the objectives of packaging management.

52 **Tests help you compare shipping containers,** by Wendell H. Thomas, assistant agricultural economist, Clemson College
Looking at moisture-resistant corrugated boxes, wirebound crates, and bushel baskets as containers for peaches hydrocooled before shipment.

67 **Never order machinery by telephone,** by Kaye Holstebro, manager of sales application engineering, Portland division, Emhart Manufacturing Company
There is more to adequate sampling for machinery development than just a supply of product—it includes operating conditions and plant methods.

78 **Does the adhesive help laminated water-vapor barriers?** by J. K. Peterson, packaging engineer, packaging research and development laboratories, Reynolds Metals Company
Close examination of specific combinations shows just what contribution the adhesive in a lamination makes to package effectiveness and performance.

83 **Pressure-sensitive tape or steel strapping?** by John O. Younger, container technologist, Quartermaster Food and Container Institute
Effect of varying the taping and strapping patterns on regular-slotted and full-telescope fibreboard shipping containers to get more strength.

92 **Simple forms and methods control packaging inventories,** by Raymond E. Horton, supervisor of packaging, Cape Ann Fisheries, Inc.
The particular problems of the fishing industry provide a basis for developing a simple system of control—with workable forms to use.

100 **Practical pointers to better folding carton performance: Part IV—User plant storage, handling, and scrap control techniques**
Fourth part in our "carton" series, discussing importance of proper packing for transport, of temperature and humidity in storage areas, among other pointers.

Package Engineering is indexed in Engineering Index

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Reader Service Cards on Pages 119, 120

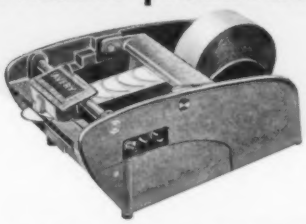
Our December, 1960 issue will carry a cumulative editorial index for the year, listing our feature articles by subject, author, and other headings.

the triumph of an idea

AVERY labels

are pressure-sensitive for profitable production

25th Anniversary 1935-1960



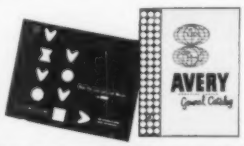
It all began with Avery . . . and an idea about a new type of "self-sticking" label –the world's first pressure-sensitive label!

The story of industry's acceptance of this label and its ever-growing use of pressure-sensitive labeling is truly the story of Avery—and the *Triumph of An Idea!*

Modern Avery Labels have contributed much to efficient labeling methods and more profitable production, for unlike ordinary labels—all Avery Labels are *applied dry*—with a soft finger touch—for *clean*, pressure-sensitive labeling. Each label is individually diecut—on sheets or rolls—for manual or fast, automatic labeling.

Avery is the only manufacturer of self-adhesive products that has complete control of production facilities—from developing and mixing of the adhesives to the completed label. Specialized experience and "know-how" that is unequalled today!

May we tell you more about Avery Labels—and other Avery pressure-sensitive products . . . and show you how their greater efficiency will save you time and money?



Write for your **free** copy of AVERY's new labeling catalog and a colorful brochure describing Avery's new pressure-sensitive Metallics that are gaining swiftly in popularity as decorative trim, panels, nameplates.

AVERY LABEL COMPANY *a division of Avery Adhesive Products Inc.*
1616 South California Avenue, Monrovia, California

Here are but a few of the thousands of ways in which manufacturers are profitably using AVERY LABELS today

Samples of Avery Adhesive labels—removable KUM-KLEEN and permanent PERMA-GRIP—will tell you more than a thousand words. May we send yours?

AVERY LABEL COMPANY DIV. 179
117 Liberty St., N. Y. 6 • 608 So. Dearborn St., Chicago 5 • 1616 So. Calif. Ave., Monrovia, Calif.

☐ Please send free Avery catalog and the METALLICS brochure. ☐ Include KUM-KLEEN and Perma-Grip sample labels.

Name _____

Company _____

Address _____

City _____ Zone _____ State _____

A note from the Publisher

Is marketing the business of Packaging Institute?

Packaging Institute, at its Annual Forum last fall, had one session devoted to package marketing, and it has just been announced that a committee on marketing will be organized on a permanent basis.

I am inclined to believe it is a mistake for PI to dilute its efforts on the subject of marketing which is the responsibility of few, if any, of its inidvidual members within user companies.

Today, it is virtually impossible to attend conventions and other business meetings on a wholesale basis. Time is too valuable and, in addition, expense accounts for a production manager or a technical director to attend sessions on surface design in packaging, which is not their responsibility, would not be approved for very long.

So expanding PI into marketing will involve getting as members an entirely new group of advertising and sales personnel who have little in common with present members.

Prior to World War II, packaging was relatively uncomplicated, and the technical and engineering problems were simple by today's standards. Packaging is not simple today. In a three-day session, it is not possible to more than scratch the surface of today's tremendous technical and engineering problems, so adding a subject that is not the responsibility of members certainly will not strengthen PI.

A more logical approach, if PI is to broaden its base, would be to devote more time to the packaging of durable goods and bulk packaging. Now, the sessions are largely devoted to problems of packaging for retail sales, but a quick check of corporate user members indicates that most of them package not only for retail sale but also for institutional use and use by industry—some don't package anything for retail sale.

An objective of PI, as set forth in the by-laws, is: ". . . to help solve problems of a technical, engineering, or economic nature. . ."

Don't you agree that the best interests of all would be served by keeping it this way?

Angus J. Ray

Publisher

PACKAGE engineering®

AN ANGUS J. RAY PUBLICATION

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TALK ABOUT TROUBLE-FREE, HIGH SPEED PACKAGING...

500 CANDIES WRAPPED IN 1 MINUTE WITH AVISCO® CELLOPHANE

Cellophane is unmatched by any other packaging film for high speed machine performance. The twist wrapping of 500 candies a minute is just one example. What makes this possible? Cellophane is rigid and static-free. It feeds and forms perfectly. And, when a sealing operation is involved, it seals quickly and securely. What's more, cellophane's sparkling transparency creates greater sales appeal, and its freshness, flavor and aroma retention are superb.

Result—*total packaging economy*. We offer a complete packaging service to assist you and demonstrate how Avisco cellophane, plain or printed, will answer *your* requirements better and more economically than any other packaging material. Contact us for an appointment with our representative or a selected cellophane converter specializing in your field.

P.S. Avisco cellophane is low in cost. It takes only 15c worth to wrap 500 of the candies shown above.

AVISCO®

AMERICAN VISCOSE CORPORATION, FILM DIVISION

1617 PENNSYLVANIA BOULEVARD, PHILADELPHIA 3, PA.

FOR AUTOMATION

CENTRIC'S "TRIG-O-MATIC" OVERLOAD RELEASE CLUTCHES

Offer

A new field tested signaling actuator to be used in conjunction with the proved "Trig-O-Matic" Overload Release Clutch.

Modern high speed machinery requires torque-limiting devices that automatically disengage at a predetermined torque *to give complete overload protection.*

Centric's "Trig-O-Matic" Overload Release Clutches' unique design provides positive torque limitation without wear on the clutch. Their trigger action disconnects the load the instant an overload occurs. Along with the new signal actuator, "Trig-O-Matics" will perform these four important functions —

1. *Automatically disconnect load.*
2. *Instantaneously shut down power-drive.*
3. *Signal the occurrence of machine overload.*
4. *Maintain indexing (due to inherent design)*

When overloaded condition is corrected, the clutch is reset and operation is resumed in a matter of minutes — without special tools. The driven machine then resumes operation at the exact cycle point at which it was released.

"Trig-O-Matics" are fool proof — service-free. Do not require lubrication or adjustment. Are not affected by climate changes.

Are delivered as complete units — ready to install. Available with flexible couplings (shaft-to-shaft), sprockets, pulleys, sheaves and gears.

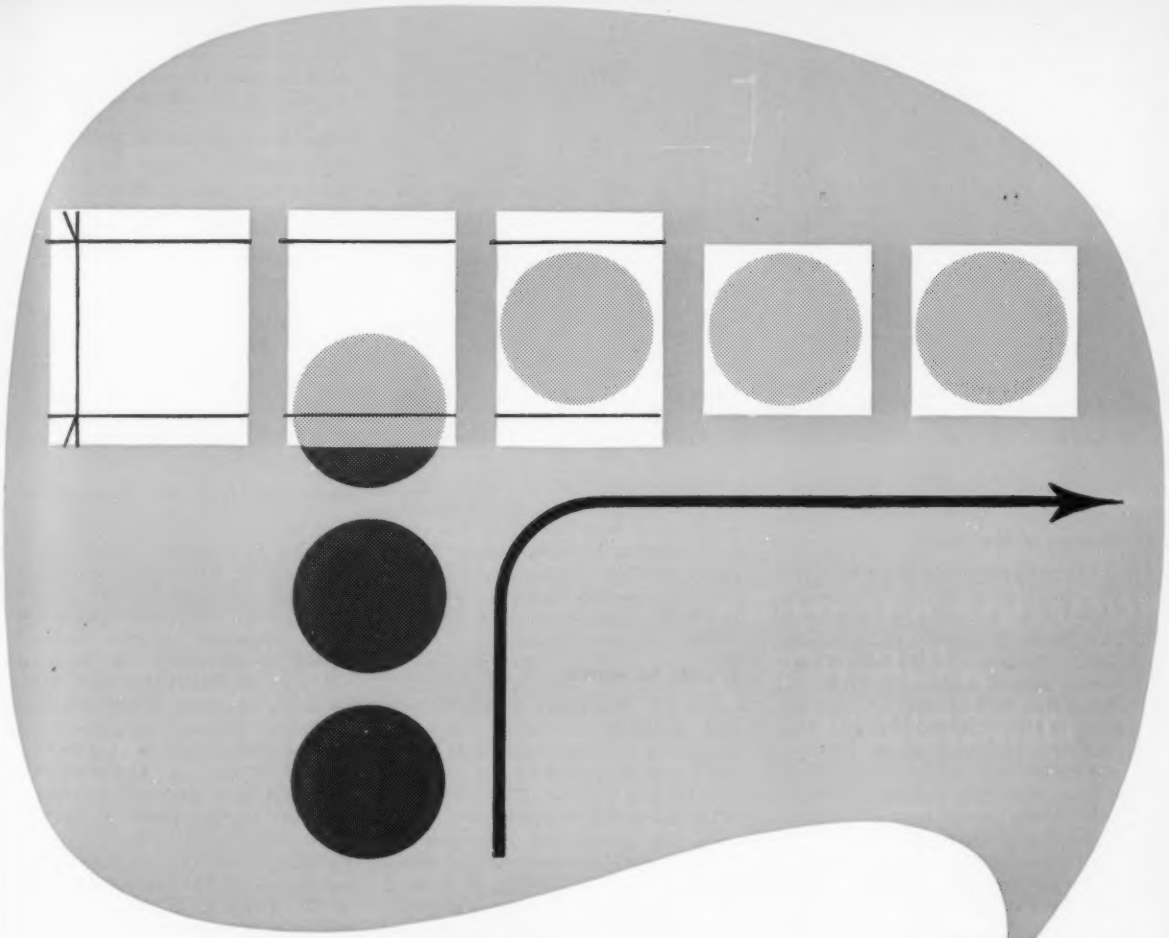
Standard design "Trig-O-Matics" have capacity ranges from 9" lbs. to 30,000" lbs.

Bulletin #304 completely describes "Trig-O-Matics"

CENTRIC *Clutch Company*

Also manufacturers of the well known Centric Centrifugal Clutch-Couplings.

P.O. BOX 175 U.S. ROUTE 9 AT MAIN STREET WOODBRIDGE, N. J.



KEY TO MASS MARKETS: PACKAGING SYSTEMS . . . The big new world of mass merchandising and mass selling depends on high ratios of production to meet volume demand. This calls for packages which can be automatically set up, formed, filled and closed at high speeds. CCA cartons, **plus** high-speed machines developed through CCA's Machinery Development Department, are helping manufacturers meet mass market demands. To **pack it—move it—sell it** is the business of CCA packaging.

CONTAINER CORPORATION OF AMERICA
Chicago 3 . . . and all key marketing areas

CCA

Folding Cartons, Shipping Containers, Sefton Fibre Cans, Molded Plastic Products, Point-of-Purchase Displays, Paperboard

The PULSE/of packaging

Groups in the news:

ENGINEERING INDEX, INC., says the annual edition of The Engineering Index—1959, is ready for distribution this month. It contains annotations on over 30,000 articles in 249 fields of engineering interest. Address: 29 West 39th Street, New York 18, N.Y. . . . AMERICAN SOCIETY FOR TESTING MATERIALS, announces the eleventh edition (1960) of its Compilation of Standards on Plastics, containing 213 standards, 22 of which are new. ASTM Committee D-20 on Plastics prepared the bulk of the standards. ASTM headquarters, 1916 Race Street, Philadelphia 3, Pa., offers copies at $9.00 each.

Packaging across the seas:

Emerging from its centuries-old shell of isolationism, Ireland is now taking more interest in industry and packaging. Its government made a small grant to the recently formed IRISH PACKAGING INSTITUTE to help educate manufacturers (by lectures, films and advisory service) in the importance of packaging. Special problem: many manufacturers do not recognize their need of packaging help. . . . SCOTT PAPER CO. says one of "the most encouraging things" about 1959 was the "spectacular showing" of its international operations—with overseas sales increases ranging from 7 to 34 per cent. . . . HERCULES POWDER CO. has formed subsidiaries in Sweden and Holland to furnish chemicals for paper and protective coatings.

OWENS-ILLINOIS GLASS CO. has established a subsidiary in Geneva, Switzerland to furnish technical assistance and work on patent license programs with some twelve European companies, and has bought an interest in COMPANHIA INDUSTRIAL SAO PAULO E RIO (popularly known as Cisper) in order to participate in Brazil's long-range growth. . . . ARTHUR COLTON CO. is exhibiting at International Trade Fairs being held this year in Casablanca, Morocco; Zagreb, Yugoslavia; and Izmir, Turkey. . . . CLUPAK, INC. says its first production overseas has been started by DYNAS AKTIEBOLAG at Baja, Sweden.

Trends to watch:

The DU PONT CO. sees a 40 per cent growth in the use of cellophane during the next ten years with sales rising from the present level of 436 million lb. to a total of 600 million lb. It attributes this expected increase to population growth and new demands for convenience foods. . . . ARMSTRONG LABORATORIES, West Roxbury, Mass., terms its commercial pressure filling of an aerosol through a metered valve "a significant breakthrough in the aerosol field," pointing out that it makes possible the aerosolizing of new water-based pharmaceutical products. . . . UNION CARBIDE PLASTICS CO. thinks the packaging industry will double in size during the 1960's, attaining an annual volume of $35 billion by 1970. . . . West Coast and mountain states farmers have become packagers and are now in a package refining phase based on producer's efforts to cut costs, according to William J. Jaenicke, San Francisco packaging consultant. He says the revolution and agricultural produce prepackaging is "a continuing and constantly developing" trend.

THE GOODYEAR TIRE & RUBBER CO. thinks the packaging films industry will increase its volume 10 per cent during 1960, in spite of "soft spots" in the market. . . . Aluminum foil-polyethylene combinations and aluminum cans, will "spearhead a packaging breakthrough this year," according to REYNOLDS METALS CO., predicting that the aluminum can market of 700 million units, will require twice the amount of aluminum used in 1959 for these cans. . . . KAISER ALUMINUM & CHEMICAL CORP., sees a 65 per cent increase in aluminum foil usage by 1970, with shipments expected to be 337 million lb by 1965 and 411 million lb. by 1970.

Notes from the government:

CONTAINERS AND PACKAGING DIVISION, BUSINESS AND DEFENSE SERVICES ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE, has named John P. Gleason, assistant director for mobilization planning. Mr. Gleason is on leave from Kimble Glass Co., an Owens-Illinois subsidiary. . . . The U.S. FOREST PRODUCTS LABORATORY, Madison, Wisc., is celebrating its golden anniversary with a banquet on June 2, a general assembly, luncheon, and laboratory tour on June 3, and an open house on June 4.

More expansion for packaging:

PLAX CORP., Hartford, Conn., has opened a new customer service laboratory devoted to testing and evaluating of its packages. . . . FEDERAL PAPER BOARD CO., INC., has begun a $12 million expansion program centered around its Richmond, Va., Seaboard mill. . . . ALUMINUM FOILS, INC., has nearly completed its $500,000 plant addition at Jackson, Tenn., more than doubling present capacity. . . . JAYVEE BRAND, INC. and PLASTICS OF AMERICA have combined their operations and are now known as JAYVEE MANUFACTURING CO. . . . The KARTRIDG PAK CO. has purchased the ALPHA ENGINEERING WORKS, INC., at Mt. Prospect, Ill. The move will strengthen its research and engineering facilities.

CELANESE CORP. OF AMERICA announces its affiliate, ROYAL MFG. CO., INC., has acquired a plant near Trenton, N.J. that was formerly owned by WHITEHEAD MFG. CO., and has started production of blown containers. . . . ALUMINUM CO. OF AMERICA has created a packaging and development laboratory to put to practical application the discoveries of the Alcoa research laboratories. . . . R. C. CAN CO., opened a new plant this month, in Arlington, Tex. The plant fronts on the Dallas-Ft. Worth turnpike, consists of 75,000 sq. ft. and is completely air-conditioned.

ST. REGIS PAPER CO. plans to offer its common stock in exchange for outstanding shares of capital stock of CENTRAL WAXED PAPER CO. of Chicago, Ill. . . . GENERAL BOX CO. has expanded its corrugated box manufacturing facilities through the recent purchase of these facilities from RIVERSIDE BOX CO., Bloomington, Ill. The new operation will be known as RIVERSIDE BOX DIVISION, GENERAL BOX CO. . . . SCOTT PAPER CO. has contracted WIGTON-ABBOTT CORP., of Plainfield, N.J., to construct its new re-

BRIGHTER OUTLOOK FOR BULK PACKAGING

...MARLEX* Tailored Resin-101 for tougher, lighter, more economical bags

Chippewa and other leading manufacturers of heavy-duty bags are now making blown-tubing linear polyethylene bags from new MARLEX TR-101 resin. Stronger, tougher, more moisture resistant, and less expensive than low-density polyethylene bags for the same use . . . these new TR-101 bags offer attractive, more efficient, and less costly plastic packaging for bulk materials.

Laboratory and field tests prove that thinner-walled TR-101 bags outperform thicker-walled regular polyethylene bags. For example, TR-101 bags have up to 40% more tensile strength and more than 2½ times the impact strength. And, because TR-101 bags have thinner walls, they cost less to buy, less to use, less to ship.

For bulk material packagers currently using Kraft paper or low-density polyethylene bags, metal or fiber drums, and similar materials . . . new heavy-duty bags made with MARLEX TR-101 mean less freight costs . . . excellent protection against product loss from handling or moisture spoilage . . . attractive packaging with colored or translucent film . . . and reduced packaging costs.

More and more packaging suppliers are finding the inherent physical properties of MARLEX TR-101 film for bags—strength . . . ability to withstand the severest climatic conditions . . . resistance to corrosion, rot and bacteria—also make it ideal for such non-bag applications as industrial tarps, agricultural films for mulches and other farm uses, covers for large machinery, and vapor barriers for construction.

For full details on MARLEX Tailored Resin-101 contact the nearest office listed below.

*MARLEX is a trademark for Phillips family of olefin polymers

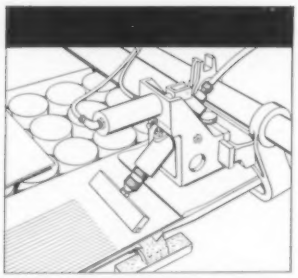
PHILLIPS CHEMICAL COMPANY, Bartlesville, Oklahoma, a subsidiary of Phillips Petroleum Company

PLASTICS DIVISION OFFICES

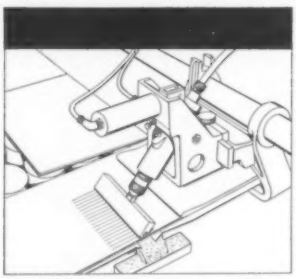
NEW ENGLAND	NEW YORK	AKRON	CHICAGO	WESTERN	SOUTHERN
322 Waterman Avenue	80 Broadway, Suite 4300	318 Water Street	111 S. York Street	317 N. Lake Ave.	6010 Sherry Lane
East Providence 14, R. I.	New York 5, N. Y.	Akron 8, Ohio	Elmhurst, Ill.	Pasadena, Calif.	Dallas 25, Texas
GEneva 4-7600	Digby 4-3480	FRanklin 6-4126	TErrace 4-6600	MUrray 1-6997	EMerson 8-1358

EXPORT: PHILLIPS PETROLEUM INTERNATIONAL CORPORATION • P. O. Box 7239, Panama City, Panama • Sumatrastrasse 27, Zurich 6, Switzerland

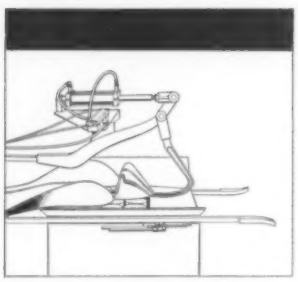
PHILLIPS 66 MARLEX PLASTIC



Skip-gap air cylinder raises applicator at the precise moment the flap reaches the skip-gap position.



Applicator is returned by an air cylinder to the gluing position after the skip-gap. The flap itself re-opens the valve allowing glue to flow.



Kicker arm folds down trailing inner flaps as outer flaps are plowed outward. If no case is present, no "kick" takes place, thus saving air and unnecessary mechanical movements.

WRITE FOR COMPLETE INFORMATION

THE STANDARD-KNAPP

GLU-LINE

UPGRADES YOUR GLUER*

* NOT APPLICABLE TO S-K 429 GLUERS BUILT PRIOR TO MARCH 1935

SIMPLEST, STINGIEST, NEATEST SYSTEM FOR GLUING CASES . . . AND IT'S READY NOW

Emhart Manufacturing Company
Portland, Connecticut
Standard-Knapp Packaging Equipment

EMHART

1. **Dessert's ready**—no pots or pans to wash with Ekco-Alcoa disposable foil containers. 2. **Pharmaceuticals**—stay full strength in sterile, nontoxic, airtight Alcoa Aluminum Foil pouches. 3. **Cigars, cigarettes, pipe tobacco** are protected against dehydration by Alcoa Foil. 4. **Instant shelf appeal** and more sales with rich, gleaming Alcoa Foil labels. Transparent inks on foil give new, glittering, attention-getting color effects. 5. **Foil-corrugated, laminated containers** add new merchandising sales appeal—maintain desired product temperatures longer. 6. **Single service items** can now be packed without preservatives in foil-to-foil hermetically sealed containers. 7. **Foil-laminated fiberboard cans** open with a pull of the string—reclose for second-use freshness and convenience.

How Alcoa RESEARCH in aluminum foil brings you BETTER PACKAGES

A pretzel manufacturer increases his sales 56 per cent. A candy manufacturer gets chain store distribution almost overnight. A cigar maker finds a way to keep his cigars fresh five times longer—and drastically cuts his returned goods loss. *Things like this happen when aluminum foil is used properly in a package.*

Alcoa's Research Laboratories can make similar things happen for you. At the Foil and Packaging Division there is a staff of expert technicians who have the experience and desire to develop for your product a package that embodies the best that foil can and should accomplish.

Alcoa® Foil can do many things for your product. Alcoa Foil keeps it fresh on the market shelf longer . . . can move it off the shelf faster . . . increases sales.

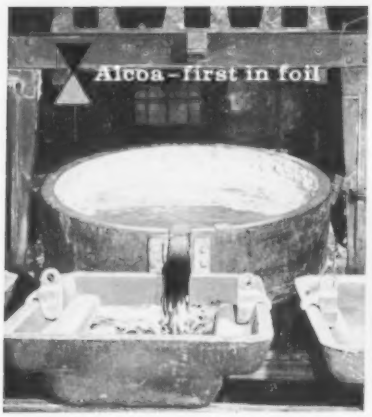
FOIL SELLS

Packages and labels made from Alcoa Foil catch the consumer's eye, make the sale. Alcoa Foil's "look of value" has often been the key influence that moved a product into a higher sales bracket.

FOIL PROTECTS

Aluminum foil is opaque, so it stops harmful light. It is impermeable, so it acts as a barrier against the flow of moisture or gas. It is metallic, so it defies the attack of insects and air-borne organisms. It is reflective, so it keeps the product near its desired temperature.

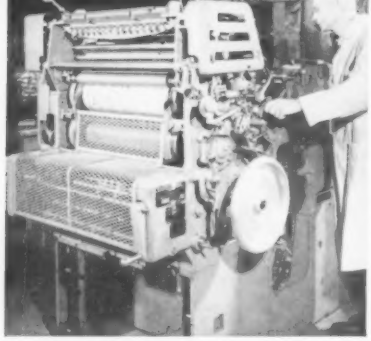
If you're contemplating a change to foil, there are many important questions to which you should have the answers. Here's how Alcoa Research Laboratories can help you . . .



From ore to foil—Alcoa Research Laboratories have their own smelting pots and remelting furnaces—process raw bauxite to alumina, reduce alumina to aluminum, melt it, cast it, roil it—do anything that is necessary to develop new alloys for better product performance.

Quick study—This cabinet is used in determining the water vapor transmission rate of various foil-substrate structures.

Samples of foil structures—Experimental packages for customers start here. Machine laminates aluminum foil to paper and/or plastic film. Finished packages are checked in Alcoa laboratories—also are sent to customer for testing.



Primer for first grade—How do you print with oil-base inks? Use wash coats or primers. This offset press finds out which primers will give quality reproduction of type and half-tones.

Sweatboxes—Humidity cabinets test for shrinkage and draw of laminated material. Packages are exposed for weeks at a time to hydration, dehydration and temperature variations.

Age before beauty—One test for all laminates is controlled heating at 140° for 48 hours. This accelerated aging is equivalent to room storage of six months to a year.

Pretest your package in the Alcoa Research Laboratories

Does your package give adequate product protection? How does your present package compare to packages of aluminum or aluminum laminations? What will aluminum foil do for your product?

To get the answers in the least expensive way, *pretest your package* in Alcoa's full-scale packaging laboratory. It is the only one of its kind in the industry and the most experienced. In the last 22 years Alcoa has run more than 10,000 individual tests covering adhesives, coatings, inks, laminations, water vapor transmission rate, and other characteristics of foil as a packaging medium. Let us put this knowledge to work for you.

MORE ALUMINUM SPECIALISTS WORK FOR YOU

Backing up the Foil Packaging Division are many other research divisions of the Alcoa Research Laboratories and *hundreds* of people engaged in specialized research on aluminum. These can be, and are, called on to supplement the investigations of the Foil and Packaging Division when a particular problem calls for knowledge or research in other fields.

ALL THE FACTS YOU NEED

The Alcoa Foil and Packaging Division can help you decide whether your product will keep better and sell better in a foil overwrap, pouch, bag or carton.

You'll find out how your package will stand up under conditions of heat, cold and moisture.

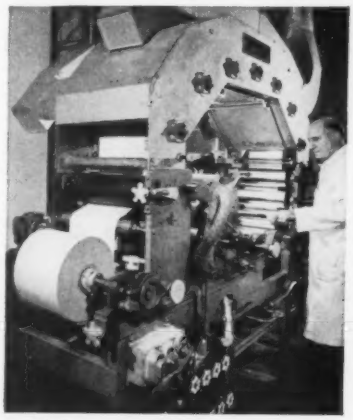
You'll be able to experiment with various color schemes and new label designs by taking advantage of Alcoa's printing know-how.

You'll see how your product will look on the shelf, stacked side by side with competition in Alcoa's "store."

In short, you'll eliminate many of the doubts and uncertainties that exist before launching a new package on the market.

There are more ways Alcoa Research Laboratories can help you . . .

Proof is in the pulling—Testing stripping strength of a lamination. Meter shows resistance to pull. Alcoa records thousands of tests made—can quickly furnish full data on laminates and adhesives used.



Laminations unlimited—Alcoa is now working on adhesion-promoters for all types of foil laminations.

Alcoa–first in foil

More than 10,000 tests

The permanent files at Alcoa Research Laboratories may contain an immediate solution to your foil packaging problems. For example, just in the last several years Alcoa has tested thousands of different adhesives, coatings, laminations—and can recommend the best for your purpose.

Top packaging team–Alcoa and converter–works with you

To know exactly where you're going, when you go into foil—come to Alcoa first. Working with the country's most experienced converters—providing more than any single company working alone can offer—Alcoa can help you create a superior package for your product.

MAIL COUPON TODAY

—start now to get all the advantages that go with this label . . .

Better Packaging
ALCOA ALUMINUM
CLOSURES

TO: Aluminum Company of America, Dept. 1657-F, Foil Packaging Division, Pittsburgh 19, Pa.

I am interested in: ☐ Aluminum Closures ☐ Foil Packaging ☐ Cans and Containers

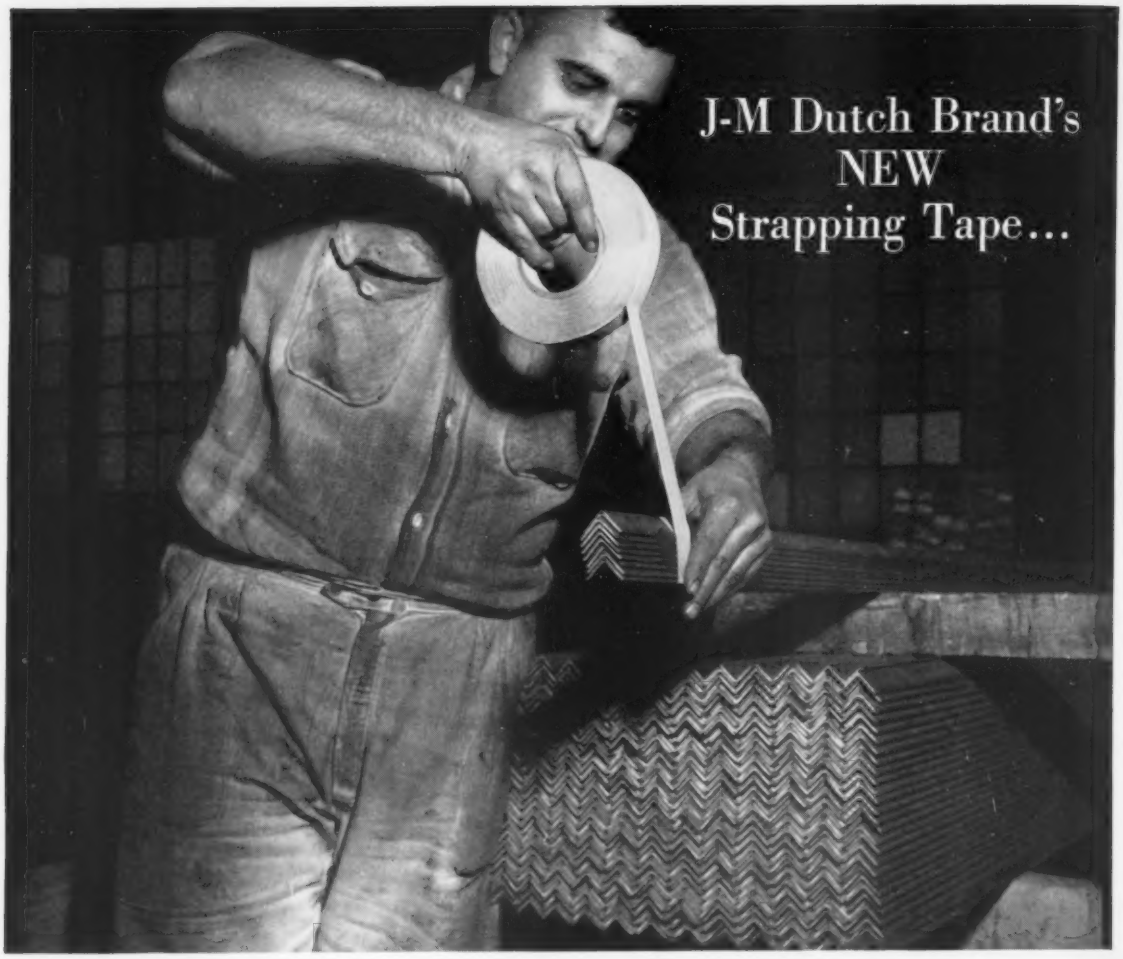
☐ Fruit	☐ Sugar	☐ Oil	☐ Automotive parts	☐ Roof coating
☐ Asphalt	☐ Candy	☐ Ice cream	☐ Pipe tobacco	☐ Calking compound
☐ Baked goods	☐ Cereal products	☐ Matches	☐ Cocoa	☐ Milk
☐ Battery acids	☐ Toys	☐ Metal parts	☐ Coconut	☐ Pharmaceuticals
☐ Beer packaging	☐ Cigarettes	☐ Resins	☐ Cookies	☐ Liquor
☐ Biscuits	☐ Cigars	☐ Potato chips	☐ Cosmetics	☐ Wine
☐ Books	☐ Fish	☐ Pretzels	☐ Chemicals	☐ Insulation
☐ Bulk chocolate	☐ Flowers	☐ Fresh meat	☐ Eggs	☐ Cheese
☐ Dog food	☐ Frozen foods	☐ Seeds	☐ Fertilizer	☐ Others
☐ Salt	☐ Poultry	☐ Tile		
☐ Detergent	☐ Grease	☐ Viscose pastes		

Name_____

Company_____

Address_____

City_____ Zone____ State_____



Rayon Reinforced Acetate Gives Extra Strength

...Saves Time in packaging and bundling

New Dutch Brand Rayon reinforced Acetate Strapping Tape offers economy, flexibility and maximum holding power . . . is especially recommended for materials handling and heavy packaging. Thousands of tough rayon filaments are parallel-aligned through the entire tape length, assuring extra durability while increasing its exceptional holding power and "quick tack."

Irregular shapes and contours . . . corners and sharp edges . . . don't affect Dutch Brand Strapping Tape. Holding power is provided with all of its surface. Stays on, too . . . won't pull, jar or slide off.

For extra mechanical strength . . . exceptional shock and impact absorption . . . investigate Dutch Brand's new Strapping Tape. See how you can save time on the line . . . in packaging, palletizing and bundling . . . while you save money! Write today for free new "idea book" giving dozens of time-saving uses.

JOHNS-MANVILLE DUTCH BRAND DIVISION
7800 South Woodlawn Avenue, Chicago 19, Illinois
In Canada—Johns-Manville Co., Ltd., Port Credit, Ontario.

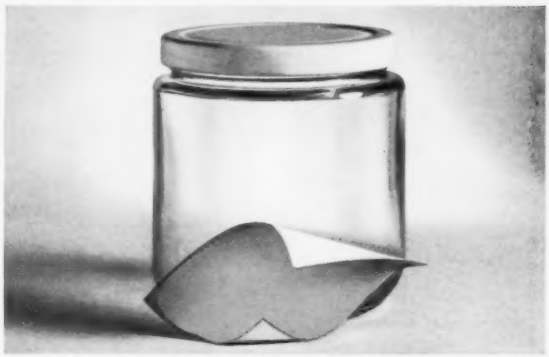
JOHNS MANVILLE JM PRODUCTS

JOHNS-MANVILLE

4 COMMON PROBLEMS IN LABELING

(and how the Arabol man helps you solve them)

1. THE LABEL CURLS — If this happens immediately after application, don't blame the adhesive. Such things as paper coating, grain, ink or die-cutting may be at fault. If you're stuck with a huge inventory (it always happens), your Arabol representative may be able to save the day by prescribing an adhesive with higher solids, for faster rate of set. Or perhaps he'll offer helpful suggestions on machine adjustment.



2. THE LABEL FALLS OFF — This usually happens at the worst time — after your bottle reaches the customer. There are two possible reasons: (1) a special silicone coating on the glass is preventing proper adhesion; or (2) if hot liquids are being packed, the adhesive is crystallizing before it forms its bond. The solution? Call your Arabol man. He'll have the formula adjusted so that you get proper adhesion.

3. THE LABEL BLISTERS — Spotty application of adhesive may be to blame. If so, your labeling machine probably needs adjustment. The *bottle* is often the culprit, too. Its surface may contain bulges or hollows. Or, once the adhesive is applied, the label's *printed* side may expand or contract at a different rate from the *underside*. Your Arabol man can usually make the diagnosis and prescribe the cure.

4. THE LABEL IS DISCOLORED — Sometimes unsightly spots appear immediately after the label has been applied. Or, they may crop up weeks later in storage, especially when humidity is high. Either way, something has happened to cause a chemical reaction between paper, ink and adhesive. The solution may call for an adjustment in your adhesive formulation. A problem like this requires some canny sleuthing, but your Arabol man is up to it.

THE BEST WAY to solve adhesive problems is to prevent them from happening. You can begin by telling us *all* the conditions your adhesive must meet—in your plant, in transit and after it reaches your customer. You may not be aware of how important some of these conditions are. To help you understand them more fully, we have prepared an interesting booklet that has saved many of our customers no end of aggravation—and money. It's called "HOW TO BUY ADHESIVES—23 BASIC YARDSTICKS." It makes interesting reading. Send for it today.

ARABOL ADHESIVES

14 PLANTS AND WAREHOUSES TO SERVE YOU ON A LOCAL BASIS

THE ARABOL MFG. CO., 110 EAST 42ND STREET, NEW YORK 17, N. Y. • CHICAGO • SAN FRANCISCO
LOS ANGELES • ATLANTA • PHILADELPHIA • BOSTON • PORTLAND, ORE. • ITASCA AND McALLEN, TEX.
CINCINNATI • DENVER • TAMPA • LONDON, ENG.

55-2

For more information circle No. 210 on Reader Service Card, Page 119

GAYLORD PACKAGING DELIVERY
IS ALWAYS ON THE BALL

Your packaging operation can't get to first base without steady container delivery. So make Gaylord your mainstay—because Gaylord's 16 plants all over the country pitch in to keep your boxes coming, day in and day out, when you want them, where you want them.

Don't let erratic supply throw you a curve. Call your nearby G-Man now, and get him on your team.

CROWN ZELLERBACH CORPORATION
GAYLORD CONTAINER DIVISION

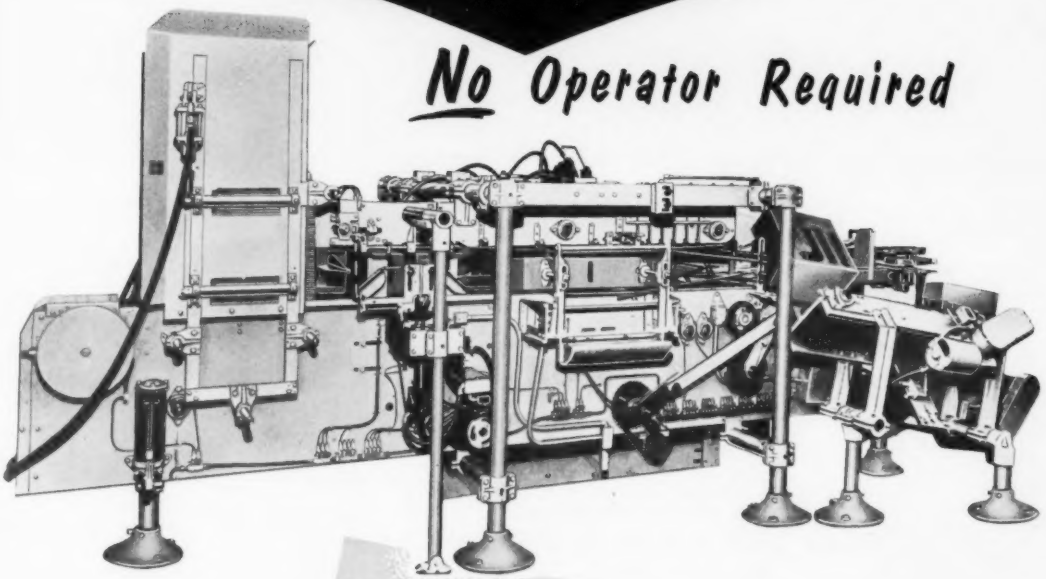
IN CANADA • CROWN ZELLERBACH CANADA, LTD. VANCOUVER, B. C.

HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

...for high speed handling

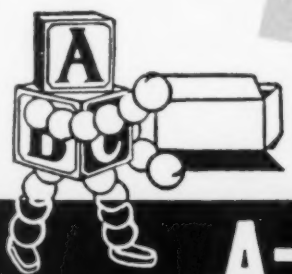
A-B-C *Automatic* CASE OPENER POSITIONER and PACKER

No Operator Required



This high speed case opener and packer can be made adjustable. Up to 25 CASES per MINUTE. End loading, side loading or top loading cases. Positive automatic feed, handling all types of cases, stapled, glued or stitched. Does not require special shipping cases or tolerances. Will run standard mill shipments of corrugated boxes. Automatic accumulation of a wide variety of carton loading patterns.

Whatever your packaging problem there's an A-B-C MACHINE to solve it

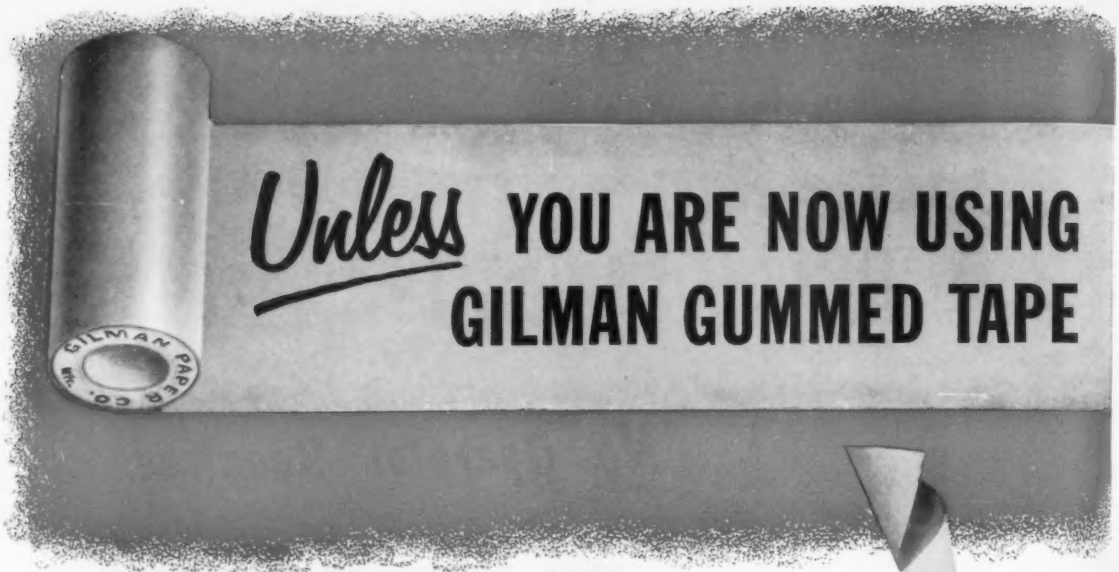


WRITE TODAY FOR DETAILS — FLOOR PLANS and SPECS

A-B-C PACKAGING MACHINE CORP.
TARPON SPRINGS, FLORIDA

For more information circle No. 212 on Reader Service Card, Page 119

◄ Circle No. 211 on Card, Page 119



Unless YOU ARE NOW USING GILMAN GUMMED TAPE

CHANCES ARE YOU ARE WASTING UP TO 10% OF YOUR TAPE COSTS *through excessive curling...*

Gilman Gummed Tape, regular or reinforced, is **COLD-ROLLED*** to reduce curling to a minimum!

As a result, you use every foot of tape on the roll, right down to the core!

Stop paying for waste...switch to Gilman Tape and get your full money's worth!

Gilman Paper Company

630 Fifth Avenue, New York 20, N. Y.
Western Sales Office: Daily News Bldg., Chicago 6, Ill.
Mills at St. Marys, Georgia and Gilman, Vt.

Gilman PAPER CO.

If your paper merchant cannot supply you—call us.

Please send Free copies of ☐ "Gummed Tape Tips from Gilman" . . . ☐ Color Swatch Book. Also, Free sample ☐ "Cold-Rolled" Gummed Tape ☐ "Cold Rolled" Reinforced Tape ☐ Asphaltic ☐ Non-asphaltic

COMPANY NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

INDIVIDUAL_____ TITLE_____

OUR PAPER MERCHANT_____

*Trade Mark

HOW LESTOIL PRODUCTION "CAUGHT UP" WITH SKYROCKETING SALES

- Plant expansion includes latest Pneumatic high speed equipment

Lestoil's dramatic and rapid ascendency, from the ruck to front runner in its field in a few short years, is one of the classic stories of American business success.

Almost overnight Lestoil retail sales grew to giant proportions, stimulated by a saturation technique of advertising and merchandising. Lestoil was forced, with great rapidity, to build new production capacity adequate to its requirements.

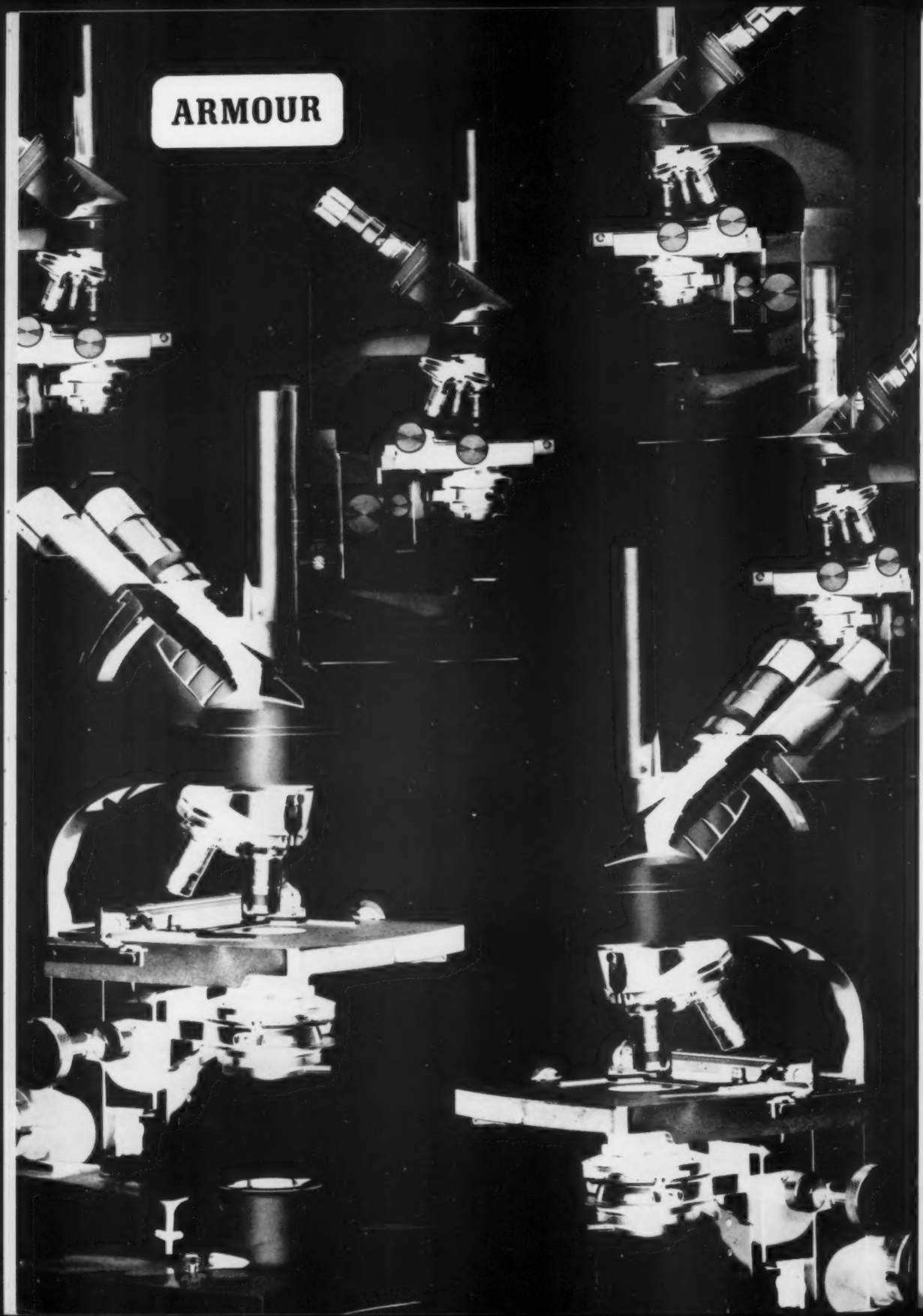
Lestoil's expanded production facility is the last word in modern manufacturing technology. To meet its need for bottling speed and efficiency Lestoil selected and installed Pneumatic filling and capping equipment. Several multi-head Rotavac units serve to continuously fill the Lestoil bottles as they travel a circular course to the intake of Pneumatic capping machines. Here turn-on closures are applied to uniform torque at speeds corresponding to the filler output, ranging up to 250 per minute.

Something like eight million bottles a month go through these Pneumatic machines with hardly a hitch or hesitation. Smooth running efficiency of this high order results in the "lower cost per container" operation which has attracted America's leading producers to Pneumatic packaging and bottling equipment. Advanced design and precision workmanship are the earmarks of all Pneumatic equipment — naturally enough, because Pneumatic was the pioneer in its field and has more experience in its specialty than any other maker of similar equipment. It costs less in the end to use Pneumatic equipment . . . there's plenty of "case history" evidence to prove it. Ask us to show you.

45-Head Rotavac Filler in operation at Lestoil's new plant in Holyoke, Massachusetts.

PNEUMATIC SCALE CORPORATION, LTD., 77 Newport Avenue, Quincy 71, Mass. Sales Offices: *New York; Chicago; Dallas; Rochester.* Agents: *Fred Todt Company at Los Angeles, San Francisco and Seattle. Rockwell Pneumatic Scale Ltd., Edgware Road, London, N. W. 2, England, O. R. M. A., Paris 8, France. Carbert Manufacturing Co. Division, Cambridge, Mass., Delamere & Williams Co., Ltd., Toronto.*

PNEUMATIC



Le

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June,

Let Armour Packaging Engineers custom-cushion your product with Hairflex!

When the value and fragility of your product demands maximum protection, turn the cushioning problem over to an Armour Packaging Engineer.

He'll study the product requirements, shipping, handling and environmental hazards, make a recommendation that will assure safe, out-of-package delivery, and at the same time, cut the weight and volume of your dunnage.

With Hairflex cushioning, you'll get the added advantages of faster, easier packaging on the line, and a completely re-usable cushioning material that pays for itself.

Armour custom-cushioning service is fast because Armour has the facilities and locations to meet your requirements in a matter of days. Call your Armour man for detailed information, or write the factory direct. No obligation, of course.

Armour Hairflex pillows your product in thousands of minute hair coils vulcanized into one unit. Hairflex is moisture and fungus resistant, dust-free, and maintains its shock resistance in temperatures as low as −45°F. Armour produces Hairflex in sheets and rolls as well as die-cut shapes.

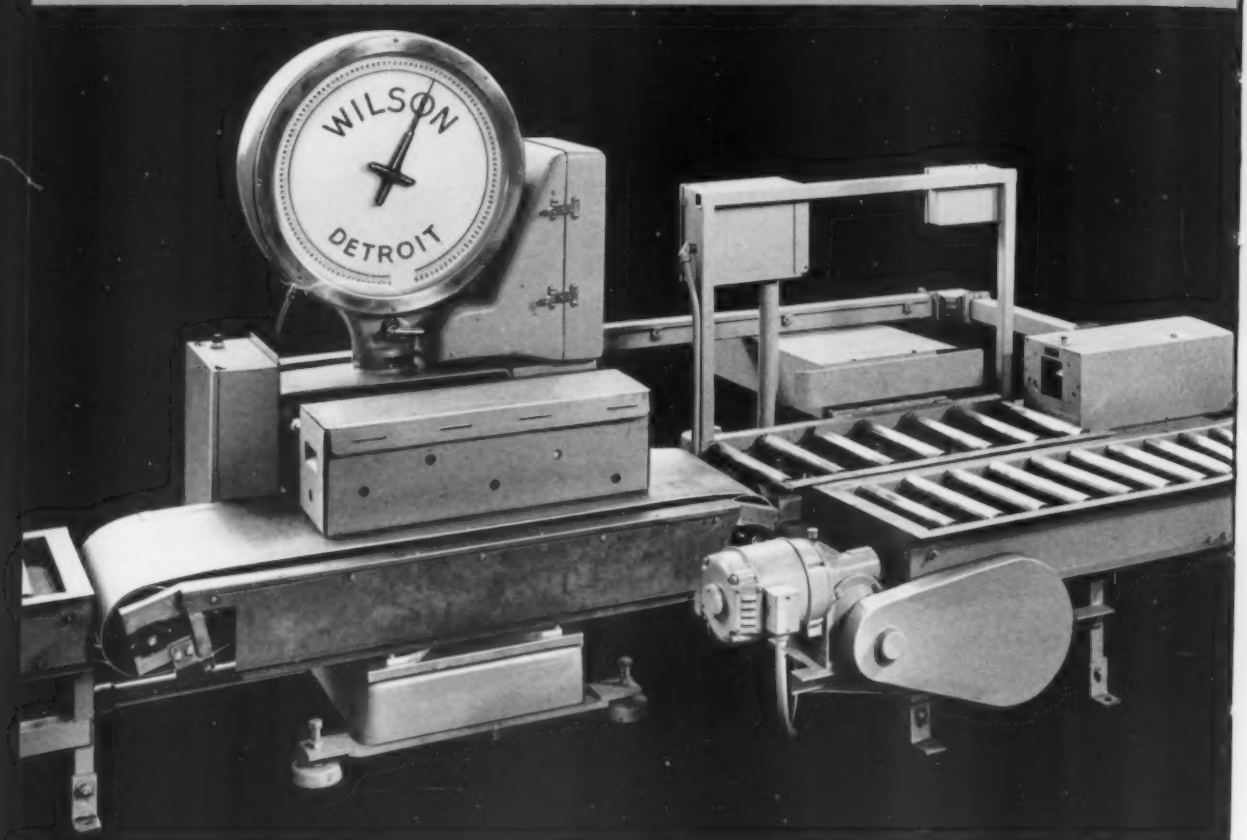
ARMOUR ALLIANCE INDUSTRIES

CUSHIONING PRODUCTS DIVISION

16123 Armour Street, N. E., Alliance, Ohio

2001 Saybrook Ave., Los Angeles, Calif.

CUT THAT BOTTLENECK AT THE END OF THE LINE!



WILSON WEIGHT BRANDER

imprints exact weight on containers AUTOMATICALLY

Visual determination and marking of weights on cartons or containers can produce production bottlenecks in a packaging system operation. If date or codes must also be marked, this production bottleneck can become even more serious.

In addition, the human error factor in correctly reading weights and legibly marking the correct weight on the container can further complicate the production problem and may result in losses of time and money.

The Wilson Weight Brander will eliminate these problems and absolutely insure accurate weighing and container imprinting automatically.

Best of all, the Wilson Weight Brander is not a standardized piece of equipment in the sense that it can be employed on only specific types of packaging lines.

The location of the imprint can be on either side of the container or on the top as well as the end. This same equipment can print in a variety of numeral sizes. Dating, coding and counting are also possible. Practically any type of container can be processed using the basic Wilson Weight Brander system.

Production speeds to 600 units per hour and higher are possible depending on the size of the package and the weight range.

In short, Wilson engineers will gladly survey your particular needs and recommend how best the Wilson Weight Brander can be used to produce the results you require. They need know only container size, weight range, position and size of desired imprint and production required.

For additional information concerning the Wilson Weight Brander or, for that matter, our solution to your complete packaging or processing problem, write or wire today.

WWB

WILSON AUTOMATION COMPANY

27101 GROESBECK HIGHWAY (WARREN

P.O. BOX 3855, DETROIT 5, MICHIGA

PACKAGING SELECTOR . . .

Check the WIDTH
Forget the LENGTH

CLEARSITE FLEXIBLE CONTAINERS ARE NOW AVAILABLE IN . . .

6 DIAMETERS

1"

1 3/8"

1 1/2"

1 5/8"

2 1/2"

2"

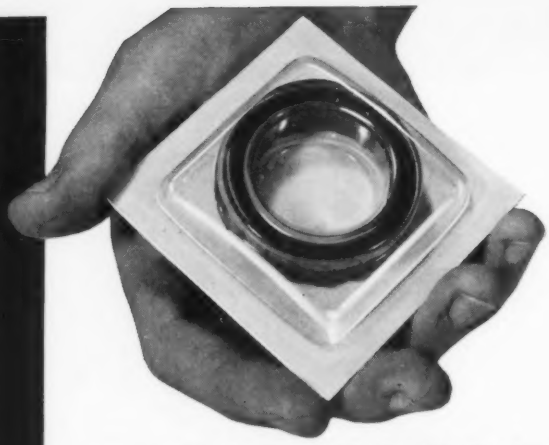
In addition to flexible vials ranging in diameter from 5/16" to 7/8", Clearsite now offers a line of large diameter flexible vials with shell closures. Pick up your product, place it over any of the circles on this page and you'll know immediately whether you can go Clearsite. Chances are you can because these thin wall extruded vials make the ideal package for countless items. Forget the length! Whether you need an inch, a foot or a yard, the body of the extruded container can be cut to your exact requirements.

- Clearsite is a thin wall, flexible extruded vial . . . is crystal clear . . . will not crack or tear . . . has no seams . . . reinforced bottom. Comes in any length and can be multi-color printed.
- Clearsite flexible containers are used to package small electrical and mechanical parts; irregularly shaped items for display and orderly shelf storage; for many pharmaceuticals and cosmetics; name the product—you'll find Clearsite has the package.

For complete information write DEPT. 551.

CELLUPLASTIC CORPORATION
24 Commerce St. Newark 2, N. J.

Blister packs ...always clear and perfect



New Sundstrand Model 58 Packmaster vacuum-draw designed for each package — can be changed over in five minutes.

Butyrate or acetate film blisters produced on the Packmaster never become discolored or get milky. They're sparkling clear right out to the corners — even on irregularly shaped packages.

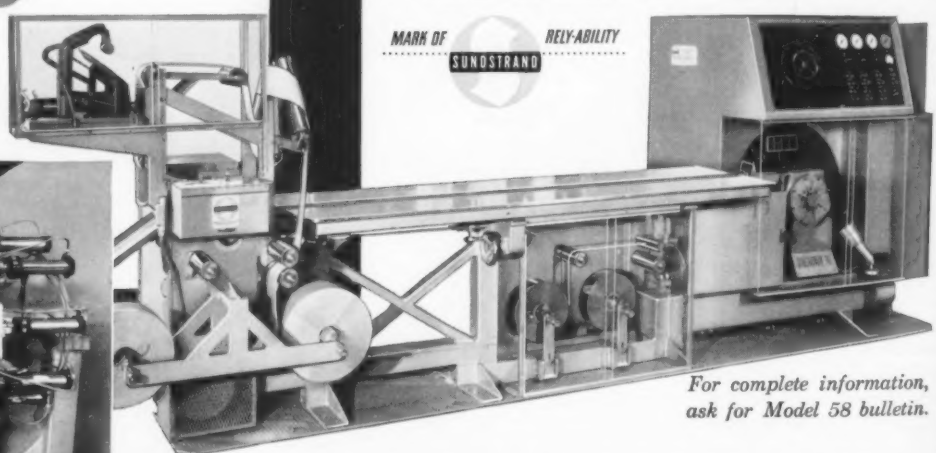
Instead of conventional die change-overs, the Packmaster employs a complete interchangeable drum assembly for each package as illustrated at the lower left. With this arrangement the vacuum-draw of each drum is factory-engineered for the specific die, insuring blisters of perfect transparency.

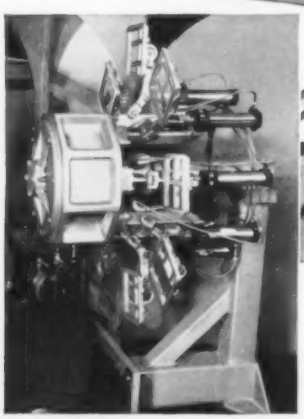
Complete change-over of the drum assembly takes five minutes or less. Wheel-mounted, it is rolled up to the machine located on two dowels and screwed securely in place by hand. Two hose connections for air and vacuum are provided with quick disconnect fittings. The Packmaster runs heat-sealed blister packs in sizes up to 6 x 6 x 1¾″ in regular or irregular shapes at rates up to 125 per minute (3 x 3″ package).

SUNDSTRAND-AMERICAN BROACH

ANN ARBOR, MICH. Division of SUNDSTRAND CORPORATION

MARK OF SUNDSTRAND RELY-ABILITY





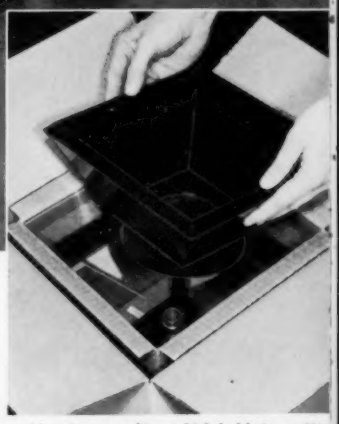
For complete information, ask for Model 58 bulletin.

EASY CHANGE-OVER of complete drum assemblies makes the Model 58 Packmaster profitable on short- as well as long-run production. *Stand-by film and paper rolls* eliminate shutdowns — when one roll is almost used up, the stand-by roll is spliced in one continuous feeding. Enclosures around film, oven, and sealing assemblies keep out dust. Control console centralizes all operations.

For more information circle No. 218 on Reader Service Card, Page 119

Circle No. 219 on Card, Page 119 ►

In-store display of Bruest, Inc. Gas-Glo Lawn Lites.



New inner packing which holds Lawn Lite firmly in place — prevents glass breakag

HOERNER-DESIGNED CORRUGATED CONTAINER

REDUCED DAMAGE CLAIMS BY 83%

Bruest, Inc. of Independence, Kansas manufactures the well-known Gas-Glo Lawn Lite. These attractive lights add grace and distinction to homes throughout the country.

One of the problems Bruest, Inc. faced in shipping their fine products to dealers was glass breakage. Damage claims amounted to a sizable figure. Bruest wanted a shipping container that would withstand the rigors of handling and shipping — provide protection for their lamps.

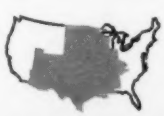
A Hoerner Packaging Engineer* helped Bruest solve the breakage problem. A new inner packing was designed to hold the lamps firmly in place and give the corrugated container added strength. The new container helped reduce damage claims by 83%. It also cut packing time to one-half and saved Bruest, Inc. over $4,000 last year.

In addition to protecting the product, the new container serves as an attractive carton for window and island displays.

How a Hoerner Packaging Engineer can help you

If you package things, call the Hoerner plant nearest you. A Packaging Engineer will study your operation without obligation. He can increase your profit margin by reducing labor and material costs and shipping losses. All through improved packaging with corrugated. Call today.

**The Packaging Engineer responsible: R. P. Laster*



HOERNER BOXES, INC.

Corrugated Specialists for Mid-America

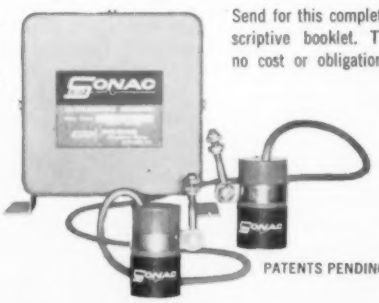
GENERAL OFFICES: 600 Morgan Street, Keokuk, Iowa • PLANTS: Fort Smith and Little Rock, Ark.; Des Moines, Keokuk and Ottumwa, Iowa; Danville, Illinois; Minneapolis, Minn.; Tupelo, Miss.; Springfield, Missouri; Sand Springs, Okla.; Sioux Falls, South Dakota; Fort Worth and Mission, Texas • ASSOCIATE: Cajas y Empaques Impermeables, S.A., Mexico City D.F., Mexico

A NEW, ULTRA-SONIC, NON-CONTACT SENSING AND SWITCHING SYSTEM

SONAC

Here truly is a new dimension in automated controls! Delavan's new SONAC uses ultrasonic energy for its "beam". This new concept offers many advantages over available sensing devices. SONAC has no lamps to burn out . . . nothing to replace . . . eliminates down time. SONAC is unaffected by vibration, dust, industrial contamination or ambient light. SONAC will sense ferrous and non-ferrous metals, liquids or solids, transparent or opaque materials, yet requires less power than an ordinary flashlight. These are a few of SONAC's advantages.

Send for this complete descriptive booklet. There's no cost or obligation.



PATENTS PENDING

DELAVAN Manufacturing Company
WEST DES MOINES • IOWA

U.S.I. POLYETHYLENE NEWS

A series of advertisements for plastics and packaging executives by the makers of PETROTHENE® polyethylene resins

JUNE, 1960 — U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation — 99 Park Ave., N. Y. 16, N. Y.

Packaging Notes

Molded polyethylene containers which can be hermetically sealed by automatic packaging machines are now available for frozen or chilled foods. The semi-rigid containers are reported to be useful for many applications where plastic has heretofore been inadequate due to problems of leakage or dehydration. After the containers are filled, polyethylene film is heat sealed around the reclosable lids, thus hermetically enclosing the contents of the package. A convenient pull tab is provided for initial opening.

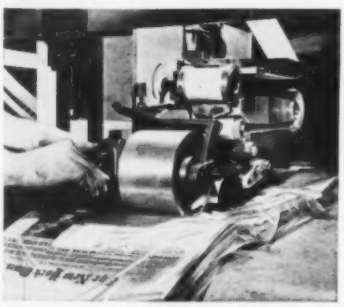
The containers are currently produced in pint and half-pint sizes. They are supplied in from one to four colors or can be left with a clear background for product visibility.

The manufacturer claims the polyethylene containers offer shipping and handling economies because they are lightweight and unbreakable.

Safety snap-on caps which fit tightly over medicine bottles, are a recent polyethylene development. They make it virtually impossible for children to get at the bottle's contents, yet adults can easily remove the caps with a flick of the thumb. The closures are said to stay secure no matter how often they're used.

Newspapers in heat-sealed polyethylene bags are now being mailed to suscribers for the first time, reports a metropolitan publisher.

Copies of the paper's Sunday edition are bagged at the rate of 1,500 per hour, using semi-automatic baggers and a continuous heat sealer. A special machine handles rolls of pre-addressed labels, coated on the reverse side with a thermoplastic adhesive.



Roll stock, pre-printed with subscriber's name and address, is automatically heated, cut, indexed and placed on the bags by the labeling attachment. The thermo-plastic coating of the label adheres firmly to the polyethylene bag.

The pre-formed 14 x 19½" polyethylene bags permit copies to be shipped flat, facilitating handling, stacking and shipping.

Newspaper officials report that the 1.5 mil polyethylene bags protect papers against rough handling, soiling, tearing and weather. They agree that the improved appearance of the paper should have an influence on customer re-orders of mail subscriptions.

U.S.I. Introduces Three New Polyethylene Blow Molding Resins

New PETROTHENE Resins Produce Bottles of Excellent Appearance, Are Easy to Process

U.S.I. has developed three new PETROTHENE polyethylene resins with properties particularly suited to individual blow molding requirements. Two of the resins can also be used for injection molding. All have been evaluated by U.S.I.'s Polymer Service Laboratories and have been successfully field tested.

PETROTHENE 101 and PETROTHENE 102-2 can be used in both blow molding and injection molding, the first in applications requiring high stiffness and good stress crack resistance, the second in applications where stiffness and impermeability to liquids, oils, and gases is important. PETROTHENE 209-2 is designed for use in blow molding, especially for relatively small moldings with thick side walls.

Each of the resins is easy to process and produces bottles of outstanding appearance, good stress crack resistance and excellent low-temperature flexibility.

Lower Cost Per Container

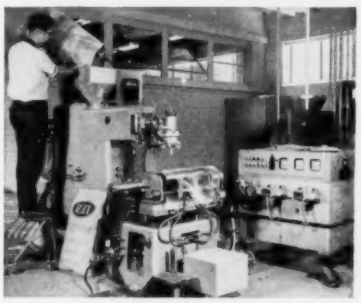
High stiffness and good stress crack resistance are the key characteristics of PETROTHENE 101 (density–0.924, melt index–2.0). This permits a reduction in wall thickness and consequently, a lower cost per container. Its torsional modulus of elasticity is approximately 18,000 lb/sq in. higher than the best of three other similar polyethylene resins commonly used for blow molding.

The stress crack resistance of PETROTHENE 101 was tested in an accelerated shelf-life test by filling thin-wall tubes molded of the resin with a commercial detergent and holding them at 120°F for 4 months. There were no container failures even though the metal closures were beginning to show signs of corrosion.

Carboys For Chemicals

High flow rate is the key characteristic of PETROTHENE 102-2 (density-0.924, melt index-2.0). This makes the resin particularly useful in blow molding pieces 6 to 20 oz. or heavier.

Because PETROTHENE 102-2 is also highly impermeable to liquids, oils and gases, it is a desirable resin for blow molding large carboys for liquid chemicals. However, normal precautions should be observed in producing containers for chemicals which act as stress cracking agents.



Extrusion blow molding machine in operation at U.S.I.'s Polymer Service Laboratories, used for evaluating the new PETROTHENE molding resins.

Small Bottles a Natural

The excellent low-temperature flexibility of PETROTHENE 209-2 (density 0.920, melt index-3.0) makes it ideal for bottle blowing where the moldings are relatively small–under 10 oz.–and have thick sides. Its stress crack resistance is comparable to that of competitive resins used for the same applications. In field evaluations, cycle times with this resin were found to be faster than those of comparable resins. Yet seal strength at the parison pinch-off point–often a problem when blow molding cycles are shortened–is good.

Data Available On Silk Screen Printing Machines

A manufacturer of machines for direct printing on polyethylene bottles and other containers is offering a brochure describing the company's line of equipment. The machines, which are automatic and semi-automatic, can print on flat, cylindrical and conical surfaces, and even on objects of awkward shapes. Multicolor printing is possible by printing one color and allowing it to dry before applying the next.

New Twin-Station Machine For Versatile Blow Molding

A new twin-station blow molding machine which permits simultaneous operation with either identical or different molds has been developed. For example, a toy can be blown in one station at the same time a two-quart bottle is being blown in the second station.

The machine's capacity is large, accommodating molds up to 36" by 21" wide and 28" daylight with a 12" stroke. Equipment is said to be safe, simple and low in cost to operate and maintain.

Using seven C&K Wrap-Kings, Drake's packages both their 2½-oz. and 12-oz. coffee cakes at the rate of 65 and 72 units per minute respectively. Machines are capable of top-efficiency performance of 80 packages per minute without unwanted crumb build-up.

C&K Wrap-Kings keep pace with high-speed production line which turns out 1200 cakes every 75 minutes.

C&K WRAP-KINGS at Drake Bakeries help boost sales 300%...up production 100% ...reduce labor costs 75%

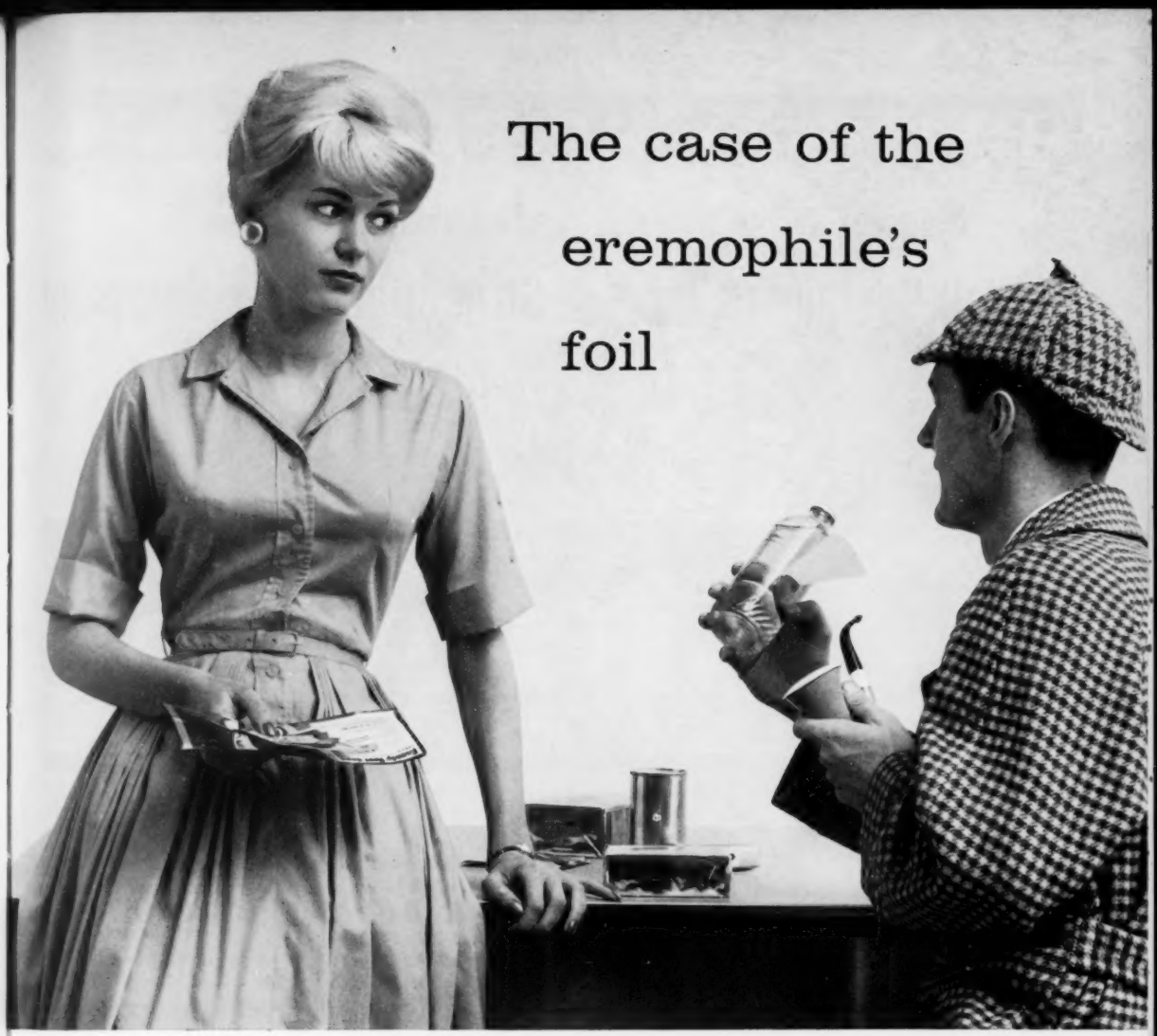
"The WRAP-KING machines have produced sales magic for our popular coffee cake line," says John Mollenhauer, Brooklyn Plant manager, Drake Bakeries. "Thanks to the high display appeal and consumer acceptance of the new cellophane package C&K machines turn out, sales have skyrocketed by 300%. In addition, there has been a 100% gain in productivity and a 75% reduction in labor costs due to the complete elimination of overtime work. And WRAP-KING machines prevent crumb build-up, the bane of all bakeries."

Drake Bakeries' highly successful experience with C&K machines is typical. In case after case involving both wrapping and automatic can handling, versatile Crompton & Knowles equipment has solved complex packaging problems, increased production and reduced costs. When you encounter packaging difficulties, either in wrapping or can packing, consult C&K. You can get full details, including leasing information, by writing Crompton & Knowles Packaging Corporation, Holyoke, Massachusetts.

CROMPTON & KNOWLES
C&K
PACKAGING CORPORATION

Stands out in PACKAGING

National Sales and Service Offices: NEW YORK • CHICAGO • LOS ANGELES • ATLANTA • DALLAS • CLEVELAND • BERKELEY, CALIF. • SEATTLE • OGDEN, UTAH • WINTERHAVEN, FLA. • TORONTO • MONTREAL



FEARLESS FULLER: Just wrapped up a very sticky case, Miss Watson.

MISS WATSON: Tell me all the devious details, Fearless.

FEARLESS FULLER: Well, I call it "The case of the eremophile's foil."

MISS WATSON: I know what foil is. But what's an eremophile? Some new type of foreign car?

FEARLESS FULLER: No. An eremophile is a person who loves solitude.

MISS WATSON: You mean like, *I vant to be alone.*

FEARLESS FULLER: Exactly. Only in this case, they wouldn't let this eremophile, a packaging engineer, alone.

MISS WATSON: Who're they?

FEARLESS FULLER: The people in his firm. Seems they couldn't get his newly-designed foil labels to adhere properly to the boxes, bags, cans, and bottles on their packaging line.

MISS WATSON: The situation sounds positively desperate!

FEARLESS FULLER: It was. That is, until I reminded them that Fuller makes a specific foil glue for each type of container.

MISS WATSON: You mean what's good for bottles may not be good for cans?

FEARLESS FULLER: Correct, Miss W. It don't mean a thing if it ain't got that cling. Fortunately, I was able to recommend some perfect Fuller adhesive solutions to his problems. Now everything's fine.

MISS WATSON: Is he alone again now?

FEARLESS FULLER: Not quite. His relatives heard how successful he was and all rushed to visit him.

MISS WATSON: Oh Fearless, you're really kooky!

FEARLESS FULLER: Perhaps, Miss Watson. But you'll have to admit there are very few adhesive problems a Fuller man can't solve.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your nearby plant.

H. B. Fuller Co.

INDUSTRIAL ADHESIVES

St. Paul, Minnesota

St. Paul, Minn. • Atlanta, Ga. • Buffalo, N.Y. • Chicago, Ill. • Cincinnati, Ohio
Dallas, Tex. • Kansas City, Mo. • Linden, N.J. • Los Angeles, Calif. • Memphis, Tenn. • Portland, Ore. • So. San Francisco, Calif. • Tampa, Fla.
Also Winnipeg, Can. • Fuller Adhesives International, Nassau, Bahamas

For more information circle No. 223 on Reader Service Card, Page 119

Tri-Wall Containers, Inc. *and* Structural Paper Company

jointly announce a new development

"K-1 BOARD"™

–a super-strength, fire-retardant corrugated board

Tri-Wall Containers, Inc., the inventor and commercial developer of triple-wall corrugated, along with its associated company, Structural Paper Company, announces a method for producing a new kind of corrugated board. This is achieved by a patented method of chemical impregnation that endows the board with amazing strength and at the same time renders it fire-retardant.

Already in commercial production, K-1 Board has properties that permit it to compete with more expensive materials such as wood and wood derivatives, plastic and *even steel.*

If you would care to evaluate the possible importance of this development to your company, we would be pleased to send an eight-page folder that fully details the characteristics of this new material.

TRI-WALL CONTAINERS, INC. • STRUCTURAL PAPER COMPANY

Associated companies working to advance the usefulness of corrugated

799 Washington Street, New York 14, N. Y.

Deliveries expedited

with Tickometer imprinted packages—

Short stocks, small orders, and frequent deliveries are the rule these days. Service has become a major competitive factor. And order filling is increasingly complicated.

If your packaging carries mandatory data such as codes, sizes, dates, contents —you can imprint the data easily, quickly, cheaply, with a Tickometer, as orders are filled — speed delivery, save time, reduce packaging inventories and waste.

In thousands of companies, the Tickometer is used to imprint, mark, code, date or price envelopes, wrappers, small cartons, labels, bags — from several hundred to 1,000 pieces per minute. Tickometers can handle sizes from 1 by 2 to 15 by 15 inches. Easy to set and operate, feed and stack automatically, can be used by anybody.

The Tickometer also counts — orders, sales slips, coupons, forms, tags and tickets. It is so accurate that banks use it for counting currency. It will record partial totals; and can be set for a pre-determined count. With attachments it can sign or endorse checks, number consecutively, save time, speed work.

It can be bought or leased. Pitney-Bowes service is always available from 320 points.

Ask our nearest office for a demonstration in your plant. Or send for free illustrated booklet and case studies.

Model 4800 Package Imprinter

Imprints folding cartons, containers, bags, etc. up to 7,500 an hour, as needed—reducing inventories and waste. No tools required, can be operated by anybody. Ask for a demonstration, or send coupon

Pitney-Bowes

TICKOMETER

Imprinting & Counting Machine

Made by the originator of the postage meter... offices in 139 cities in U.S. and Canada.

PITNEY-BOWES, INC.
7734 Walnut Street
Stamford, Conn.

Send free illustrated booklet and case studies on:

☐ *Tickometer* ☐ *Package Imprinter*

Name _____

Address _____

TENITE®

POLYETHYLENE

TENITE PLASTICS
have many jobs in packaging

Whether your package needs sparkling transparency to enhance the basic sales appeal of its contents . . . toughness to withstand rough handling in storage, in transit, or on shelves . . . a barrier to keep moisture out *(or in!)* . . . or some other special properties, chances are you will find the plastics material you need among the many formulations of the four Tenite plastics – Butyrate, Propionate, Acetate and Polyethylene.

The consistent specification quality of all Tenite Plastics is attained by rigorous controls, and Eastman's pre-eminence in color creativity has made it possible to develop and file over 40,000 different formulations and samples in the Tenite Color Laboratory.

Your Tenite representative is a plastics engineer fully qualified to suggest the best plastic material and formulation for your packaging application. You'll find his office listed under "Plastics – Tenite" in the classified telephone directories of the following cities: Atlanta, Chicago, Cleveland, Dallas, Dayton, Detroit, Greensboro (N. C.), Kansas City, Leominster (Mass.), Los Angeles, New York City, Philadelphia, Portland (Ore.), Rochester (N. Y.), St Louis, San Francisco, Seattle, Toronto.

Tenite Polyethylene is a versatile plastic that solves many packaging problems. In the form of extruded film its high degree of sparkle and clarity has made it a favorite with both extruders and packaging users. In the form of squeeze bottles and other containers it forms virtually unbreakable "packages" of exceptional gloss. Light in weight, almost chemically inert, resistant to water and moisture transmission, Tenite Polyethylene is dimensionally stable and remains flexible over a wide temperature range.

Tenite Polyethylene is available in a range of densities for injection molding, blowing, or continuous extrusion, and in a wide range of colors and color concentrates.

TYPICAL PACKAGING USES:

Tough film for produce, bread and soft goods, heat-sealable coatings for paper, film or foil, virtually unbreakable bottles, boxes, jars, and closures.

EASTMAN CHEMICAL PRODUCTS, INC.

subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE

TENITE® BUTYRATE

Tenite Butyrate is an extremely tough, lightweight thermoplastic with excellent impact strength, high surface luster, resilience, dimensional stability and good fabricating properties. It can be easily decorated and joined with a solvent cement and resists the effects of most oils, greases, weak acids and alkalies.

Tenite Butyrate is available in a wide variety of formulations and an almost unlimited range of transparent, translucent and opaque colors, plus crystal-like clear transparent. It can be injection molded or extruded as film, sheet or tubing and rapidly formed into just about any shape imaginable, with sharp detail.

TYPICAL PACKAGING USES:

Rigid transparent and colored boxes, sleeves, tubes, vials, jars and display components. Vacuum- or pressure-formed containers, blisters, bubbles and skin packs.

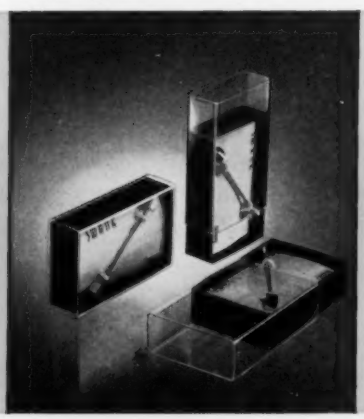
TENITE® PROPIONATE

Tenite Propionate is a cellulosic plastic with physical characteristics that, in general, range between those of Tenite Acetate and Tenite Butyrate. These include good strength and fabricating properties.

Tenite Propionate is available in a variety of formulations and colors ranging from clear transparent to opaque. It is adapted to rapid injection molding, extrusion, and vacuum forming, producing parts of high surface luster.

TYPICAL PACKAGING USES:

Cosmetic and jewelry cases, jars, boxes, sleeves, closures, vials, blister and skin packs.



TENITE® ACETATE

Tenite Acetate is the original Tenite plastic, and offers a wide range of desirable properties to the packager such as toughness, light weight, impact strength, surface luster, low heat conductivity, and good fabricating properties. It can be easily joined with a solvent cement and lacquered, and resists the effects of most oils, greases, and weak acids and alkalies.

Tenite Acetate is available in a variety of formulations and almost unlimited colors plus crystal-like clear transparent. It is adapted to fast injection molding or continuous extrusion, and sheet of Tenite Acetate forms readily with vacuum or pressure on simple equipment in short, economical cycles.

TYPICAL PACKAGING USES:

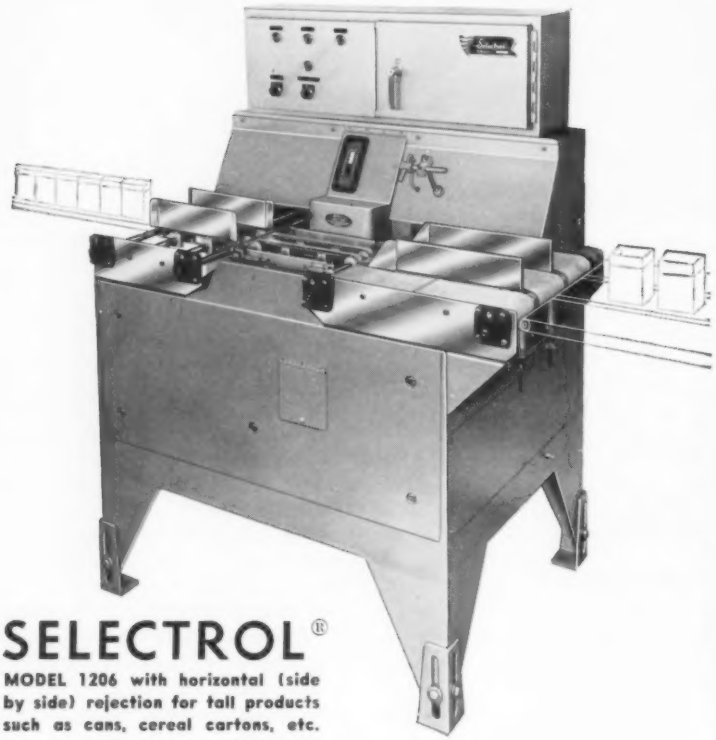
Toothbrush and other tubular containers, transparent and colored boxes, sleeves, vials, jars and closures. Vacuum-or pressure-formed containers, blisters, bubbles and skin packs.

Exact Weight's New Automatic Checkweigher

Latest electronic controls

New engineering features

New compact size



SELECTROL®

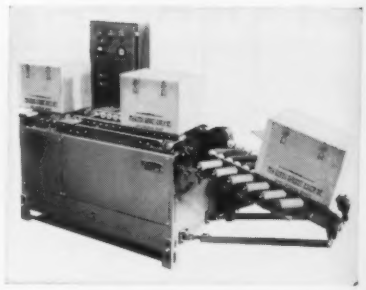
MODEL 1206 with horizontal (side by side) rejection for tall products such as cans, cereal cartons, etc.

This new Selectrol checkweigher automatically weighs, classifies and sorts at speeds up to 120 items per minute, depending on size and weight of object. Rejection accuracy is 2/10 percent of the weight of the commodity at maximum speed.

New Selectrol features include compact size that requires minimum space in a conveyor line . . . and simplified circuits. Electrical controls are mounted above the conveyor line for easy accessibility.

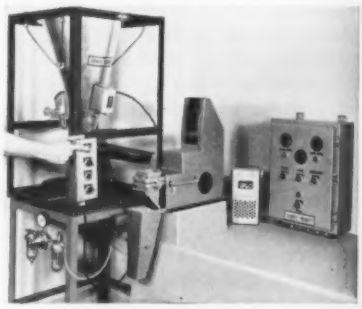
Selectrols are made by Exact Weight, a leading manufacturer of job-engineered scales for 45 years with experience gained through hundreds of checkweighing installations during the past 18 years. For complete details, write for Bulletin 3377.

OTHER EXACT WEIGHT EQUIPMENT



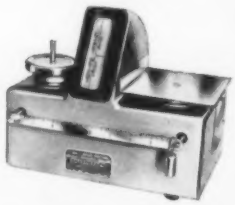
CASE AND BAG CHECKWEIGHER

Model 1250 Selectrol designed for checking bags, cartons and cases from 20 lbs. to 100 lbs. Speeds to 30 products per minute; rejection accuracy 1/10 of one percent at maximum speed. Can be supplied with or without rejection equipment. Write for Bulletin 3376.



PRECISION AUTOMATIC NET WEIGHING MACHINE

Model 4601NW for weighing dry, free-flowing products with accuracies of 1/10 grams on quantities below 10 grams and one percent accuracy on quantities of 10 grams and above. Models with capacities from 50 grams to 500 grams. Write for Bulletin 3363.



SHADOGRAPH® SCALES

Extremely fast with high degree of visible accuracy for use in all kinds of repetitive production weighing operations. Available in 35 models in capacities from 2000 milligrams to 100 lbs. Write for Bulletin 3333.

Exact Weight SCALES

THE EXACT WEIGHT SCALE CO.

912 W. FIFTH AVE., COLUMBUS 8, OHIO

In Canada: 5 Six Points Road, Toronto 18, Ont.

Sales and Service Coast to Coast

Find us in your local "Yellow Pages"

For answers on perplexing package-cushioning problems, get this data-packed B.F.Goodrich booklet. Filled with information on what to look for in cushioning materials . . . explains how to select and design package cushioning to reduce damage from shock, vibration. Send request on your company letterhead. The B.F.Goodrich Company, 188 Derby Place, Shelton, Connecticut.

PACKAGE CUSHIONING BY B.F.Goodrich

Easi-Clean RESIN ADHESIVE

RUNS A WEEK WITHOUT CLEAN-UP

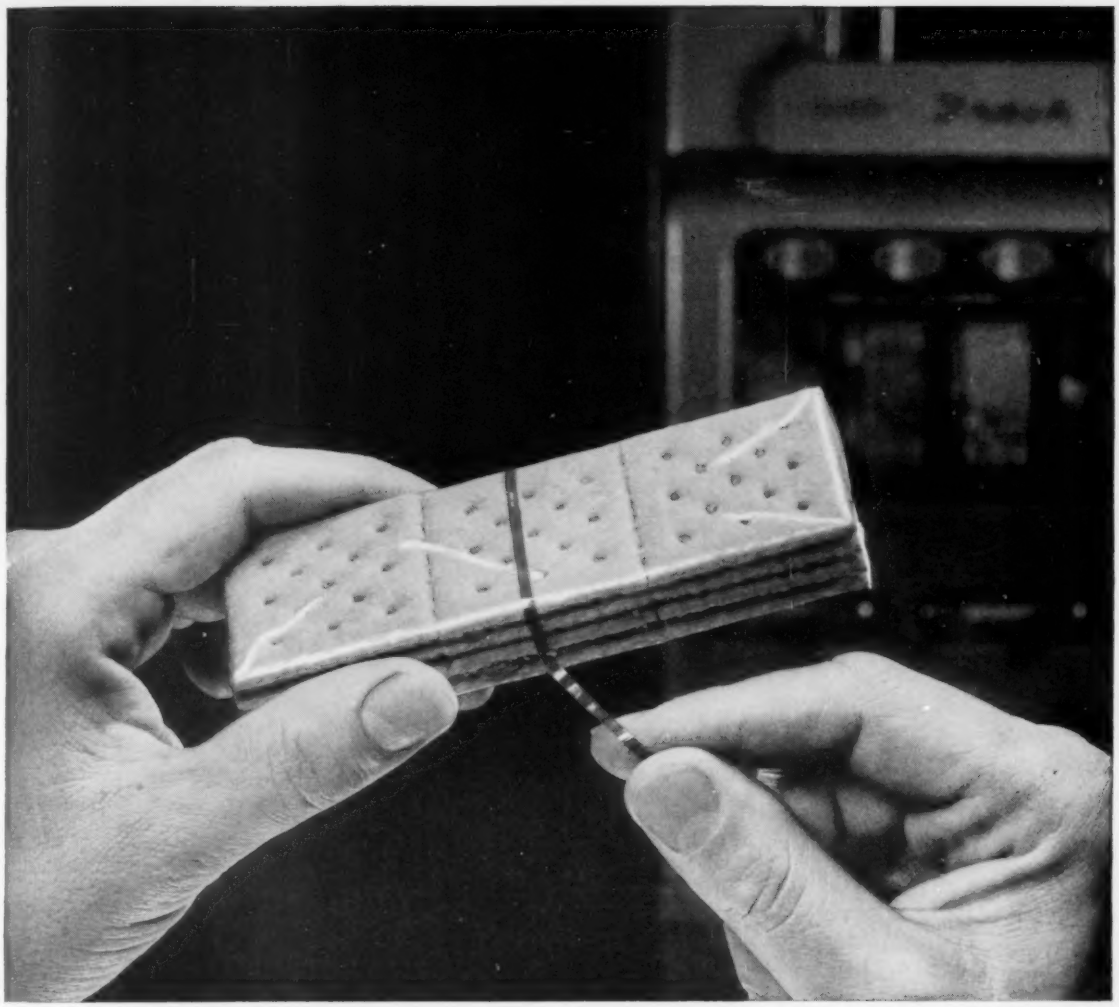
EASI-CLEAN is faster setting, stronger gripping! Runs without trouble. Cleans-up without trouble. An easy-to-use resin adhesive for everything from case and carton sealing to carton forming, double package making and labeling.

EASI-CLEAN doesn't build-up on rollers. Forms no skins in the glue pot. Permits maximum machine speeds. Increases adhesive mileage. Eliminates pop-ups and sifters. Avoids scrap and product losses.

EASI-CLEAN can be used throughout your plant. We'd be glad to arrange a trial run. Write or call your nearest National office.

National
ADHESIVES
NATIONAL STARCH and CHEMICAL CORPORATION

750 Third Avenue, New York 17 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11



Cut Vending Pack Wrapping Costs

WITH THE PACKAGE DF-1 MACHINE

What do you want in a vending pack wrapping machine? High-speed automatic packaging? Fast size changes? Neat, attractive wraps? Economical operation? You'll find these and other advantages built into the PACKAGE DF-1 machine, plus this big exclusive: only the DF-1 wraps the 2 on 3 pack, shown above, *without a bottom card.* Other features include: **High-speed packaging:** 130 packages a minute, in printed and registered cellophane with easy opening zip tape. **Wraps with or without card:** When desired, can eliminate the extra cost of using a bottom card. **Fast size changes:** Change in minutes from 2 on 2 pack to a 2 on 3 pack. **Tighter package:** Wraps a neater, tighter package. Saves on wrapping material. **New positive seal:** A new heater unit provides a bottom seal the complete length of package. Keeps contents fresher, longer. **Less breakage:** Very gentle handling reduces breakage, saves money.

The DF-1 can be fed automatically with one or two Quality sandwich makers for a complete high-speed vending pack operation. Find out how the DF-1 can cut your packaging costs. Call your nearest Package representative today.

PACKAGING IS PART OF YOUR PROFIT PICTURE

PACKAGE MACHINERY COMPANY, EAST LONGMEADOW, MASS.

NEW YORK • PHILADELPHIA • ATLANTA • BOSTON • CLEVELAND • CHICAGO • KANSAS CITY
DALLAS • DENVER • LOS ANGELES • SAN FRANCISCO • SEATTLE • TORONTO • MEXICO CITY

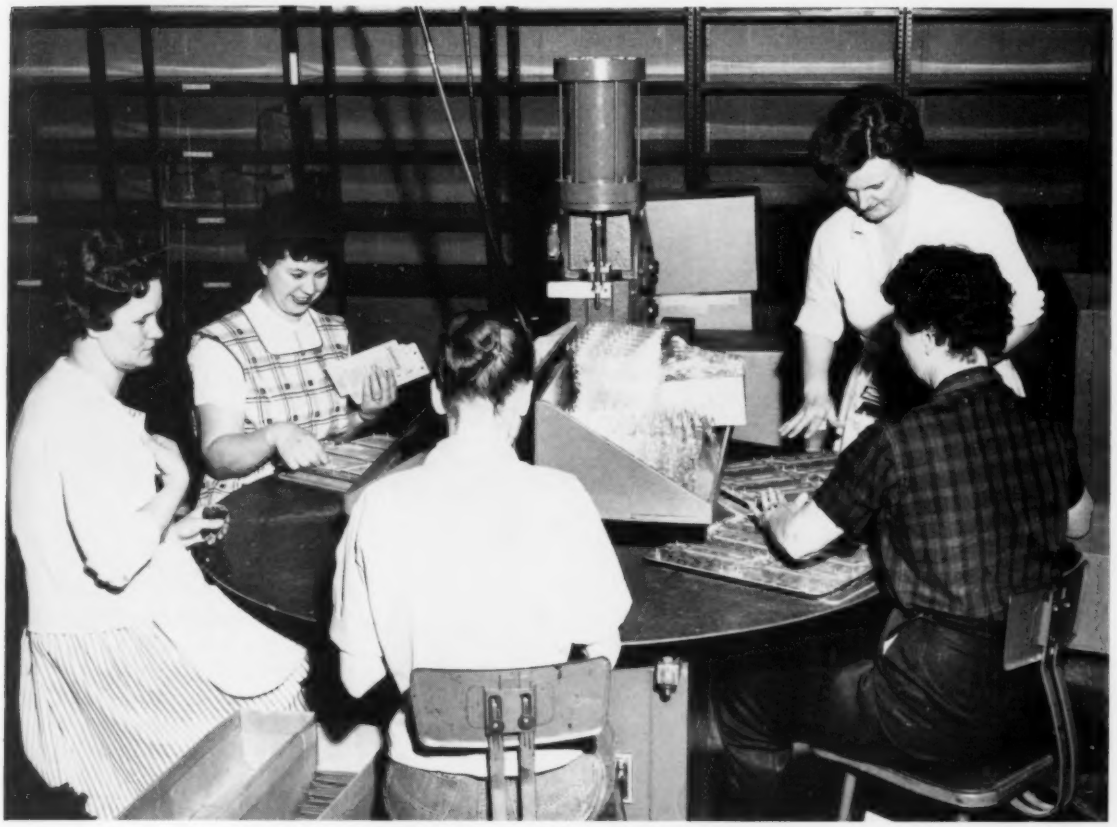
PACKAGE

It's true that H & D has a reputation for solving thorny packaging problems with imaginative box design. But our real forte is *volume production of regular slotted corrugated boxes*—the kind you probably use to ship your product. In fact, H & D's annual output includes about 225,000,000 of these economical containers. Can you make use of this *specialty* for *volume?*

Hinde & Dauch Division

West Virginia Pulp and Paper

HINDE & DAUCH DIVISION, WEST VIRGINIA PULP AND PAPER, SANDUSKY, OHIO • 17 PLANTS • 42 SALES OFFICES



GIRLS WORK PROGRESSIVELY around table in clockwise direction. No. 1 (right foreground) strips blisters, positions in jigs; No. 2 inserts pins; No. 3 inserts cartridges; No. 4 positions cards for entry into machine; No. 5 (standing) transfers completed packages to cartoning table. Where package does not contain cartridges, three to four girls can do job. Packaging supplies are kept within easy reach of girls.

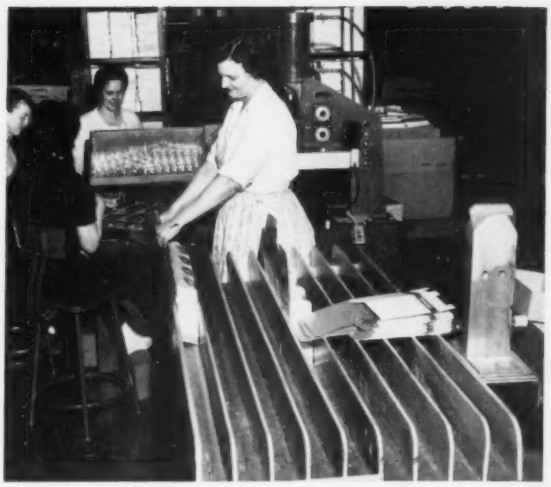
Setting up skin and blister packaging — in a hurry

By Clinton Dodds,
Project Engineer,
W. A. Sheaffer Pen Company,
Fort Madison, Iowa

With no previous experience in skin and blister packaging, we found ourselves not only having to install these operations in our plant but, also having to set them up on a volume basis. Our company's plan to launch the large-scale merchandising of the products being skin- and blister-packaged created several problems:

(1) Acquiring equipment and training our people in the technique of these packaging methods, (2) building up an adequate backlog for national distribution, and (3) accomplishing all this under the urgency of a marketing deadline date. *(Turn page)*

STRIPPING OF BLISTERS by girl (left foreground) is necessary because Sheaffer gets blisters in strings—attached by short plastic sections—separated by tissues, solving problems of nesting difficulty and static electricity in plastic package.



COMPLETED PACKAGES go into display folding cartons, then into divided rows of take-away table. Forming mandrel at right is one of several such devices plant uses in setting up cartons. Cartoned packages go into pre-shipment storage.

BLISTER PACKAGING COMBINATIONS

Although the focal point of our blister packaging (for the pen and cartridge combination) is a standard unit of Tronomatic equipment, we found that our effective use of it depended on getting the proper flow of production to the machinery and providing adequate means of cartoning and take-away after packaging.

To avoid having to sort our production coming from the packaging equipment into cartons and store these in predetermined sequence, we devised a new scheduling approach. Following the standard techniques of scheduling and production control, our people worked out a delivery of pens and cartridges to the packaging equipment so that the completed packages discharged from the machinery are in proper volume and sequence.

We have two grades of pen points and five pen colors. Proper control of scheduling assures that the desired combinations of pen points and colors flow to the cartoning table so that packaged assortments going into our preshipment storage area are in correct combinations without requiring reclassification or sorting there.

New Look At Bulk

An important lesson we learned from the operation was to get a new concept of bulk. We were accustomed to think of 1000 pens as occupying a certain cubic space. Initial experience with the blister-packaged pens and cartridges on cards soon taught us that 1000 pens and cartridges on cards take up far more space than the same number unpackaged.

We warn anyone contemplating such a package to revise his thinking about bulk and to anticipate as precisely as possible just what the packaging, movement, and storage space requirements will be. It may seem easy to do on paper but, it certainly hits you when your packaging line starts running and you find yourselves having to take away and store given quantities in larger cubic space than you previously needed.

Our package itself is basically simple. We use clear acetate butyrate preformed blisters to secure one ball point or cartridge pen and two replacement cartridges to a card whose upper surface has a pyroxylin plastic treatment. The sealing is by heat and pressure. The only use of the vacuum holes on the card is to permit the bleeding off of any moisture that otherwise might remain within the blister and cloud its inner surface or condense on the product.

Use Five-Girl Crew

For a package containing one pen and two cartridges, we use a crew of five girls working around the circular feeding table of the Tronomatic unit. Where a pen or pencil alone is involved (and no

Clinton Dodds attended the Universities of Missouri and Georgia, and state teachers colleges in Kentucky and Arkansas. Prior to joining Sheaffer, he was with American Zinc Co., and earlier, was in engineering work in Arkansas. Before becoming project engineer in the Sheaffer organization, he was draftsman, drafting supervisor, and process engineer.

CUT-AWAY AREAS of mandrel assist girl in shaping cartons prior to locking bottom tucks. Curving surfaces and recesses prevent girl from pressing flaps too far in forming cartons. Length of cartons make them awkward to handle without forming devices.

His company's decision to gain wider national distribution of its popular-priced line of ball-point pens, cartridge pens, mechanical pencils, and replacement cartridges (and to package these in skin and blister packages for impulse buying), gave Mr. Dodds the job of setting up a high-volume, yet flexible operation in minimum time. He had to train people to turn out this type of packaging—not previously used or done in the Sheaffer organization. Further, he had to supplement machines and people with gadgets and devices. His observations point the way to making the most of standard units of machinery without loss of flexibility—and with an eye to needs of the future.

GIRL PRESSES HANDLES to make knife-cuts (one at left, two at right) in carton to make it easier for dealer to open. Sheaffer engineers built this cutting device to ease use-out of carton inventory which originally was not intended for such use. Knives are spring-loaded.

replacement cartridges) we use just four girls—and further refinement of our work methods may permit us going to just three.

Normal practice is to work progressively around the table. Girl No. 1 strips the blisters after taking them from their boxes and positions them in jigs, No. 2 inserts the pen, No. 3 inserts the cartridges, No. 4 positions the cards, and No. 5 transfers to the cartoning table the completed packages coming from the machine.

Rotate Around Table

Our production averages 1600 units/hr. which is in line with our estimated standard production. We expect to step up this production as our people acquire proficiency. Our girls took to the new work methods quite readily.

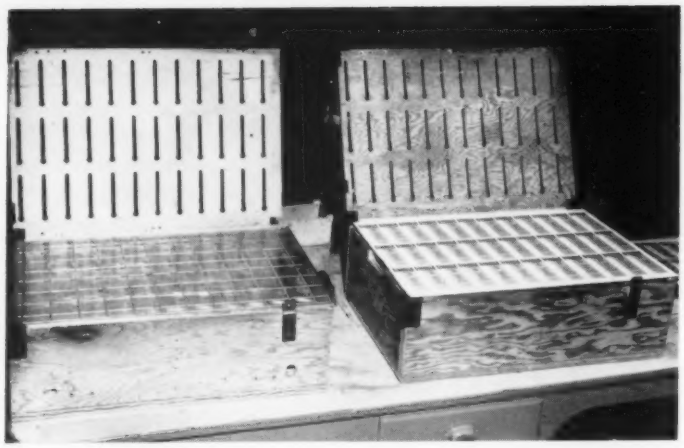
At present, we rotate them from job to job around the table. We do this twice a day so each girl is on each job four hours at a time. We have to slow down the time cycle briefly after each move but soon start it up again and resume full production.

One of the reasons justifying rotation is that some jobs are more difficult than others. For example, the girl on the distributing position has the heaviest burden of all. Fair play dictates rotating the work so that all get the harder and easier jobs equally.

Feeding Difficulties

Feeding the machine posed an early problem. We had considerable difficulty with the nesting of preformed blisters. Static electricity inherent in the packaging was a real problem. Now we specify delivery of these blisters in strings—each blister being connected to others in its string by small sections of plastic about the size of gate marks. Also, strips of tissue paper separate the strings of blisters. Even so, the blister loading station remains the slowest operation on our line.

Few mechanical refinements became necessary as we developed our operation. We did find that



LOADING RACKS feature slots in folding top (through which to drop items) and guide pins to coincide with holes—pins barely visible on rack at left. Once loaded, metal forms go to forming machine. Card on rack at right is ready for loading.

SPONGE RUBBER roller over top surface presses card down on upward-pointing pins of loading frame. Position of pins coincides with that of holes in frame at left; cartridges, dropped through frame, fall in place between pins on card resting on frame.

the machine manufacturer had not relieved the platen enough and thus the equipment heated too great an area on the card. In order to relieve the platen, we made the opening wider. Also, we redesigned the product-holding jigs to fit our particular pens and cartridges. This meant trimming away the silicone rubber in order to make it coincide with the configurations of our product.

Inspect Incoming Materials

We inspect our incoming packaging materials on a statistical quality control basis in accord with the normal techniques of that activity. However, packaging defects show up quite readily. For example, when the plastic is running a little thin and when the blisters have been drawn slightly on the thin side, as soon as one of our girls pushes one in place, she finds she is pushing it right through the fixture jig. Sealing is satisfactory but, the pushing action reminds her that the material is weakened and deserves investigation.

CARTONING SHORTCUTS

Disposition of finished work suggested several opportunities for practical shortcuts in cartoning methods. Also, one shortcut gave us a way of using up a large inventory of material not initially selected with this packaging in mind.

Put In Extra Cuts

We had quite a supply of folding display cartons which were satisfactory in every respect, except they did not meet our present standard for easy opening. We did not wish to reject the shipment and we did not want the extra labor involved in making the cartons workable. In less than a day, our engineers came up with a simple device to cut extra slits into cartons, thus making it easier to tear them open.

They developed a spring-loaded set of knives which are operated by push-handles and are mounted on a carton-forming mandrel. This device on one of these mandrels means that all the girl does is press both handles. In so doing, she makes knife cuts of the right length and in the correct places to facilitate tearing open the cartons. Since she must have both hands on the handles, there is no chance of her being cut by the knives as they come through the carton walls.

Forming, Locking Cartons

We have used a number of carton-forming devices to facilitate the girl's forming and locking the carton bottom tucks. Our cartons, which are relatively long, are somewhat difficult to handle quickly by hand. Therefore, we have developed devices such as forming and breaking mandrels. For example, one of our forming blocks has an inwardly-curved surface which creates a groove or gap. The purpose of this is to keep the girl from pressing the flap too far as she locks the carton bottom flaps because the device prevents it.

These devices emphasize that our blister packaging is inherently transitional. As a result, we will use

manual methods and techniques until we have had an opportunity to get experience on volume requirements and have determined optimum production flow. Then we will mechanize the process as far as feasible.

Speeding Work Flow

In the meantime and to meet large volume production needs in a short time without substantial investment in equipment, we find it helpful to use shortcuts and gadgets (such as our carton-forming devices) to facilitate the flow of work.

Similarly, we have a table of our own design with guide channels in it to provide movement of completed cartons from machinery to the case-loading station. We have equipped this table with forming mandrels to facilitate shaping and locking of cartons.

We are gearing this operation up to run 24 hr./day in anticipation of expected future production. Present experience confirms the basic soundness of our arrangement. As volume grows, additional refinements will probably focus on our way of improved handling and package take-away methods.

SKIN PACKAGING CARTRIDGES

Our other thermoformed packaging operation involves the skin-packaging of replacement cartridges—one to a card. Again, we have installed two units of standard equipment but supplement these with a hole-punching machine of our own development. We also have our own loading forms and work methods.

Start of this operation illustrates the production ingenuity our people can evolve to improve a packaging operation. To load replacement cartridges onto cards for skin packaging, we have developed our own frame and unit for loading the sheet of cards.

Loading Techniques

First, a girl positions a sheet of cards on the metal form itself which has a number of upward protruding pin points. These points coincide with the location of cartridges on the various cards. After spotting the card in accord with the master edge, the girl next takes a sponge-rubber roller and moves it back and forth over the card which presses it down evenly on the form—causing the points to prick up through the card.

She then swings the wood loading frame over the card sheet and drops in the cartridges through the openings in the frame. These cartridges fall in place between the protruding pin points and hence are correctly spotted for skin pack-

ONCE LOADED, each rack of cards goes into skin-packaging machine which uses film from roll at left. Cutting tables are in background. Part of operation is special machine to punch 36 holes in card simultaneously, occurring before completing slitting operation.

AFTER BEING SLIT in two directions, cards go through final separating and folding operation on table at right. Skin-packaging line uses three girls. No. 1 (center background) positions cartridges, loads frames into machine. No. 2 (left) does slitting, unloading, hole-punching. No. 3 loads packages into cartons, closes them—ready for storage, shipment.

aging. After raising the wood frame, she then moves the metal form, card sheet, and cartridges into a standard Comet thermoforming unit.

Here, the loaded cards go through the skin-packaging operation and upon leaving the machine, are transferred to a standard Comet slitting table.

Know Your Materials

Since installing this operation, we have learned a lot about cycling time and the use of vacuum. We soon found that the deeper the draw, the more cycling time we need. Also, we found that we had to use a 3-mil. stock instead of 2-mil. stock for a draw of ¼-in. deep. Even so, our basic cycling time is 29 sec. and we use 20 in. of vacuum.

In using a master plate, we found it important to dissipate the vacuum over the entire surface as evenly as possible. On one of our plates, we even positioned a wire screen and found it has a definite value in distributing the vacuum.

Prevent Vacuum Loss

Never minimize the loss of vacuum. It is very important not to lose any and you must watch out for small cracks along the equipment and seal them off. Be sure your card sheet goes to the edge of the master plate. If it does not, vacuum can go down and around the edge instead of going through the card sheet.

We milled out a groove in our vacuum box in which to put a ¼-in. piece of round rubber tubing all the way around. Half of the circumference of this tubing thus protrudes up above the milled-out recess. As soon as the machine's frame goes down in place, it presses down on the tubing, tending to flatten it out. This gives us a relatively tight seal all the way around the vacuum box and helps us meet our objective of drawing right straight through the card sheet without leakage around the edges.

Slitting Of Cards

In planning for the slitting operation, we had to allow for the drawing in of the stock on the successive slits or cuts. This is roughly comparable to the drawing in of the stock in the course of cutting and creasing in the process of folding carton manufacture. Our point is that when you are getting into skin-packaging for the first time, you have to be alert to these details and not take them for granted.

We slit cards in two directions but cut them all the way through in only one direction. In the other, nicks in the slitting wheels provide perforations about the size of gate mold marks and this is done to hold the cards together in that direction.

Before completing the slitting operation, we put each sheet through our own hole-punching die. This is a machine that automatically punches 36 holes simultaneously in each card.

As soon as a girl puts a loaded sheet into the machine, she presses both buttons (for reasons of safety, pressing only one is not enough) to make the hole-punching apparatus start. After this, she slides the sheet across the table so that it may be cut into smaller units—after which it is ready for carton packing.

Have Three-Girl Team

We use a crew of three girls for this operation. No. 1 does the positioning of cartridges and loads the frames into the machine. No. 2 handles all of the slitting and unloading and operates the hole-punching machine. No. 3 does the loading and closing of folding cartons. We found three to be the optimum number and use this even on a short run. You get no particular efficiency from going to four, and using just two cannot quite do the job.

Interestingly enough, the girls prefer not to trade off their jobs on this operation. We have authorized their so doing, but even though the job of the No. 2 girl impresses us as being the hardest of all three, the holders of these different jobs like their work and prefer not to rotate. They seem to suffer no loss of efficiency through lack of rotation.

Volume Production

We are packing 10,000 of these replacement units on each shift. What we have is a card holding a skin-packed replacement cartridge with a hole punched in it so that a dealer may hang it up for impulse merchandising. At the same time, we pack these in folding cartons so the carton itself may be a display packer on a dealer's counter.

Just as with our blister packaging, the skin packaging operation is in a state of transition and as our volume grows and we refine our techniques, we will make changes. However, the present arrangement is letting us build up an adequate volume for national distribution. We plan to go to acetate and polyethylene, rather than butyrate and polyethylene, because of a wider sheet size we anticipate using.

Pointers To Efficiency

By stamping individual folding cartons with the pen color and grade of point, one carton serves the entire operation and avoids the inventory or preprinting problem otherwise entailed. Individual folding cartons of replacement cartridges go into corrugated boxes for storage pending shipment from the plant.

Incidentally, we store our packaging materials at room temperature. Doing this avoids our having to change the heat adjustments on our machinery to compensate for moisture pickup.

We find perforated cards work better than those without perforating. To meet the requirements of impulse merchandising, we want uniformity of package appearance. While an unperforated card could give us a fine seal, we want to insure uniformity of appearance without defect of forming and we find we can do this by using perforated cards in order to get the best possible vacuum draw through the card stock. *(End)*

Companies are doing more soul-searching today than ever before to figure out just where packaging belongs on the organization chart. Mr. Worden offers a guide to making such decisions. He looks at some basic reasons for reviewing the structure and function of packaging, suggests who should do this reviewing, and tells how to spell out the objectives. His pattern for specific recommendations, comments on "line and staff," and views on a packaging coordinator should interest anyone concerned with the control of the packaging function.

Organize: the management of packaging

By Edwin S. Worden,
Edwin S. Worden & Associates, Westport, Connecticut

Are your packaging operations organized for maximum effectiveness and minimum costs? Answering the questions of just how efficient is the performance of your packaging activities and what is the best way to utilize the packaging personnel within a company should begin with this thought in mind: the proper organizational structure and establishment of systems will enable packaging people to achieve their objectives quickly, economically, and with a minimum of effort.

Because each business is different, no single method of organization or system can be developed that will serve all equally well. Each company must chart its own organization and methods to fit its traditions and practices, with due consideration given to the education, background, abilities, and experience of its personnel.

A Workable Technique

Theoretically, however, sound and workable techniques do assist in analyzing and evaluating packaging activities in a company and aid in deciding if changes would be beneficial. We are describing one such technique in the hope that it will assist other companies. You want to be sure that your packaging activities are designed for and function within the company's general organization and policies so that your packaging people can function efficiently.

First job on the agenda? Someone must review packaging activities and objectives and ascertain whether changes would result in improvements. Seven motivating factors which may lead to such a decision include:

1. High costs of packaging materials and labor.
2. Excessive complaints of product damage caused by poor packaging.
3. The desire to upgrade packaging from a merchandising viewpoint.
4. The realization that packaging operating people (those responsible for the actual packaging operations) do not have sufficient time to devote to other packaging activities.
5. The necessity for relieving others from part-time packaging activities so they can devote more time to their regular duties.
6. A feeling that all packaging objectives are not being achieved.
7. The lack of centralized direction and coordination of packaging activities between plants or departments.

There are undoubtedly many other reasons which would provide just cause for a thorough analysis of the entire packaging operation within a company.

The decision to review packaging objectives and activities is frequently initiated by a member of upper-echelon management. It may be the financial head, if he feels that costs are too high; the sales director, if he wants to upgrade packaging from the merchandising viewpoint; the top man himself, for any one or more of the factors already mentioned; the operating executive, because he notices that others are using different packaging methods; or perhaps, some other member of the company.

Ways And Means

Some method must then be agreed upon for implementing the decision to review the packaging activities. The ways and means selected depend upon company policies and practices, personnel available, etc., but will generally be one of the following:

1. The person making the original decision to review the various aspects of packaging operations will make his own investigation and decide what, if anything, should be done.
2. An assistant or someone else in the company will be appointed to make the study.
3. A committe will be formed consisting of various executives and others in the company who would have something to contribute.
4. An outside consulting organization will be retained to make an objective

study and submit its recommendations.

5. A packaging coordinator, packaging engineer, or other packaging administrator will be appointed.

Two or more of the above may be selected to combine and coordinate the investigative processes.

Tell Key People Of Project

After the means of implementing the packaging project have been selected, all department heads and others who are concerned with or who are interested in the task and the packaging operation should be notified through the proper channels and their cooperation requested. Failure to do this will often cause unnecessary delays—even, perhaps, intra-company friction.

List Company Objectives

A concise list of company objectives or aims with respect to packaging and related activities serves as an excellent spring board for this phase of the study. Even though some of the aims are self-evident (such as performing the actual packaging operations), the list should be detailed and complete.

Some of the objectives which might be included are given in Table I. Each company has to make its own list, of course, and include the activities which concern its own packaging operations.

After itemizing all of the company's objectives with respect to packaging and related activities, the next step is to determine whether these objectives are currently being achieved. There are several ways to do this. One of the simplest and most effective ways, we have found, is to prepare another check list containing the following items:

1. A list of the desired objectives.
2. A statement of which of these objectives are being achieved and which ones are not.
3. Some indication of whether or not the means or methods of attaining these objectives are satisfactory with regards to the company's general procedures, policies, etc.
4. Comments from informed personnel concerning the present methods used for achieving each objective.

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5. Pertinent information that should be helpful in deciding whether or not any changes should be made.
6. Information concerning similar types of operations and competitors' activities in these areas.

An example of such a list is given in Table II. The actual list prepared for your specific company may be much more detailed than the example shown here.

Sometimes, this list will disclose that each packaging objective of a company is being attained in a satisfactory manner and that little, or nothing, would be gained by organizational or system changes. When this is the case, the project may be dropped with the knowledge that the decision has been reached on a reasonably sound and scientific basis.

Room For Improvement?

On the other hand, the list may disclose that some of the objectives are not being achieved, that some have been partially accomplished, and that changes are definitely indicated in some areas and should be made if possible. Further investigation and study will usually point to the areas which require attention:

1. The uneven flow of work to the packaging departments during each month (or other period of time as it applies to your operation).
2. Weaknesses in the present package design procedures.
3. Possible advantages to be gained by the use of better specificatoins for purchasing packaging supplies.
4. The possibility of advantages to be gained by more standardization of packaging materials and methods.
5. Strengthening the procedures for initiating changes in packaging.
6. Improving present packaging areas and possibly using new or different equipment.
7. The fact that packaging supervisors have little or no time to devote to other packaging activities other than supervising the actual packaging operations.
8. Packaging delays caused by the failure to inspect incoming packaging supplies for compliance with purchase specifications.
9. The lack of written records covering present packaging methods and procedures.

TABLE I

Partial List Of Packaging And Related Operations

1. Perform actual packaging operations.
2. Supervise actual packaging operations.
3. Design actual packages to be used.
4. Test packages.
5. Prepare purchase specifications for packaging materials.
6. Check packaging materials for compliance with specifications.
7. Establish packaging methods and procedures.
8. Initiate changes in packaging in order to provide more protection and reduce damages, improve appearance and merchandising aspects, and reduce costs.
9. Standardize materials and methods.
10. Lay out packaging lines, areas, etc.
11. Design jigs, fixtures, packing desks, machinery, etc.
12. Evaluate alternate packages and packing methods.
13. Coordinate and standardize on packaging materials and methods in multi-plant operations.
14. Prepare packaging manuals and instructions.
15. Evaluate and recommend packaging machinery.
16. Supervise installation of packaging lines, etc.
17. Coordinate and follow up on all phases of package development activities.
18. Act as chairman of packaging committee.

TABLE II
Sample Analysis Of Present Packaging Activities

Activity	Being Achieved?	By Whom?	Comments
Perform actual packaging operations	Yes	Operating depts.	Satisfactory performance. Very few complaints of damages due to packaging failures. Peaking of work load toward end of month necessitates larger labor force than would be required if even work flow could be maintained throughout month. Some delays in shipments during busy periods.
Supervise actual packaging operations	Yes	Operating depts.	Satisfactory. Supervisors have little time for other packaging activities and do not have engineering or cost analysis background.
Package design	Yes	Suppliers of packaging materials	Reasonably satisfactory. Purchasing dept. obligated to buy from supplier submitting acceptable design and cannot obtain competitive bids. Competitors are industry leaders in field of package design and have their own design dept.
Package testing	Yes	Suppliers, operating depts., market research dept.	Supplier's laboratory tests packages for protective characteristics. Operating depts. make actual shipping tests. Market research dept. tests packages for merchandising features.
Prepare purchase specifications for materials	Yes	Purchasing dept., materials suppliers	Purchasing dept. has little time to devote to this activity. Has no way of evaluating specifications. Better specs. might enable them to procure satisfactory materials at lower prices.
Check materials for compliance with purchase specs.	No	.....	Purchased materials not checked for compliance with specs. Operating depts. say shipping containers improperly sized occasionally; frequency of error undetermined.
Establish packaging methods and procedures	Yes	Operating depts.	Operating depts. doing best they can but don't have time to do thorough job. Feel improvements can be made and costs reduced if someone had time for this activity. No records kept of present and past methods and procedures.
Standardize materials and procurement methods	Yes	Operating depts.	Each operating dept. tries to standardize within its own dept. However, there is no standardization between plants and operating depts.
Initiate changes to provide more protection, reduce damages, improve merchandising, and reduce costs	Yes	Packaging committee, operating depts., and and sales dept.	Packages of competitors are preferred by customers because of easy opening feature and better appearance. Material and labor costs increasing each year and now represent 24% of total cost of packaged products. In view of large annual expenditure for labor and materials, more attention should be given to this. Greater attention to improvement of merchandising features of consumer packages is also indicated.
Lay out packaging lines, areas, etc.	Yes	Operating depts.	Operating depts. doing best they can but do not have time to do thorough job. Feel improvements can be made and costs reduced if someone had more time for this.
Supervise installation of packaging lines, etc.	Yes	Maintenance dept.	Satisfactory. However, they report that they have little time for preventive maintenance activities.

10. The lack of preventive maintenance activities.

Specific Recommendations

Each of these items can then be scrutinized in detail. Upon completion of this step, the preparation of a summary (such as illustrated in Table III) will provide the material upon which to base specific recommendations.

For example, the conclusions summarized in Table III indicate the need for improved package design from the merchandising aspect, the possibility of saving from $237,500 to $260,000 annually, and the need for several other changes. Based on this information and a knowledge of the particular company under consideration, recommendations might be:

1. That a full-time packaging coordinator be appointed whose duties should include:
   a. Establishing a package development procedure.
   b. Acting as chairman of a packaging committee.
   c. Initiating packaging design changes except as specified under item No. 3, below.
   d. Preparing adequate purchasing specifications for all packaging materials.
   e. Standardizing the packaging materials and procurement methods for all packaging areas in all plants.
   f. Preparing standard packaging procedures.
   g. Studying and analyzing packaging materials and methods for the purpose of reducing costs.
2. That industrial engineering department be requested to study and make recommendations on:
   a. The possibility of evening the flow of work to the various packaging areas throughout the month.
   b. Present new or alternative packaging layouts and equipment in order to find ways to increase efficiency and reduce costs.
3. That the responsibility for initiating all packaging design changes relating to the merchandising aspects of the pack-

TABLE III

Sample Survey Of Conclusions Reached In Study Of Packaging Functions

Item	Comments and Conclusions	Advantages of Change	
		Tangible	Intangible
1. Uneven flow of work to packaging depts.	All dept. heads concerned agree that a more even work flow might be effected but feel that considerable effort will be required to achieve this. Estimates of potential labor cost reductions range from 10% to 15%.	Annual savings of $45,000 to $67,500.	Improve morale by reducing pressure on personnel at end of month. Improve customer relations by eliminating delays in delivery.
2. Change present package design procedures	Sales and advertising depts. feel company is handicapped by failure to lead industry in merchandising features. One reason company's share of total market has steadily decreased during past 5 years is its failure to improve in this area.	Increase sales by about 5% or $500,000 per year.	Overcome company's handicap caused by the better packages of its competitors.
	Ratio of packaging materials and labor costs to net sales has increased for past 6 years, despite the feeling that packages are not as well designed as competitors. Preliminary survey of packaging consultant estimated materials costs can be reduced by 20% and still provide desired merchandising improvements. 15% savings in labor costs estimated.	Annual savings on materials of $100,000. Labor savings of up to $67,500.	.....
	Traffic mgr. reports company's percentage of claims due to improper packaging is below industry average.	None	None
3. Improve packaging materials purchase specifications	Purchasing dept. believes improved specs. will enable them to procure satisfactory materials at lower costs; reduce disputes when materials are substandard; and facilitate continuous review of materials for improvements, less expensive alternate materials, and other purposes.	No data available on which to base an estimate of potential economies.	.....
4. Standardize packaging materials and methods	Numerous opportunities for simplification and standardization have been disclosed by brief investigation of materials used in different packing units and plants of similar products. Differences of as much as 25% noted in materials costs and 50% in labor costs. Some of the latter is due to differences in base wage rates.	Rough estimates indicate potential savings of $25,000/year.	Standardization will reduce inventory items, required storage space; permit purchasing savings through larger quantity orders; reduce record keeping; reduce change-over time on packaging lines; etc.
5. Modify present procedure for initiating changes	Presently lacks centralized guidance and is haphazard. Item No. 3 indicates advantages of formalizing it and making one dept. or person responsible for its direction.	.....	See item No. 3, "Change present package design procedures."
6. Review present layouts and equipment	Operating depts. feel present ones should be reviewed by qualified personnel to achieve worthwhile economies.	Estimated savings included in No. 3 figures.	.....

ages be assigned to the advertising department. To assure coordination of this function with the other packaging activities, it might also be recommended that the advertising department coordinate all packaging design activities with the packaging coordinator.

The final step in the project is to be sure that the packaging coordinator is assigned to a position in the organizational structure of the company where he can be most effective. Careful consideration should be given to factors such as: (1) size of the company, (2) type of products made by the company (e.g., consumer or industrial), (3) importance of the merchandising aspects of the packages, (4) whether the company has one or several plants, (5) amount of money spent on packaging materials and labor in relation to total costs, (6) present organizational structure, (7) type of business (e.g., manufacturing, distributor, wholesaler, etc.), (8) responsibilities of the packaging executive, and (9) any other pertinent or influential factors.

Line Or Staff Jobs?

Companies may have two types of packaging administrators, namely, line managers whose duties include supervision of the actual packaging operations and staff specialists who are not responsible for the actual packaging operations but whose duties include other packaging functions (such as those specified for the packaging coordinator in the preceding discussion). In actual practice, however, these categories of duties may be combined so that in some respects they are line and in other respects staff.

Generally, if the packaging administrator's duties include supervision of the actual packaging operations, he is placed in a line po-

(Continued on Page 104)

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Simply empty contents of this package into clean vessel or hot tea dispenser. Add two gallons of boiling water. Serve. Make fresh daily. Yield: Two Gallons
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PROTECTIVE PACKAGING MATERIALS

SIZE GRADING, INSPECTING, PACKING OPERATIONS by South Carolina peach packers.

Tests help yo om

By Wendell H. Thomas,
Assistant Agricultural Economist, Clemson College, Clemson, South Carolina

From the time hydrocooling first proved of value in maintaining peach quality, increasing numbers of South Carolina growers and packers have begun using this process. As a result, all peaches leaving South Carolina for Northern markets are now hydrocooled.

Hydrocooling is nothing more than the removal of "field heat" from freshly harvested peaches. This is accomplished by passing the fruit through a shower of ice water (temp. 34 to 40° F.) in a container on a conveyor belt until the temperature at the center of the peach has been reduced to about 48° F. Then, as the fruit emerges from the hydrocooling operation its container receives a lid, lid is labeled and immediately passed on the conveyor into a refrigerated truck.

Until recently, the only containers used for hydrocooling peaches in South Carolina were the wooden basket, wirebound crate and regular wooden field box. Of these three, the basket is most commonly used. Although packing-shed operators in Southern peach orchards have been aware of the growing use of corrugated shipping containers for packing fresh fruit and vegetables, with the advent of hydrocooling in the peach industry, any hope of using this material as a shipping container appeared to be doomed. Regular slotted corrugated boxes made from ordinary corrugated fibreboard simply fell apart when subjected to hydrocooling operations.

Ever since Northern markets have shown a preference for peaches that have been cooled *before* shipment, hydrocooling in an ice water shower has proved the most effective method of lowering the temperature of the fruit. This led to cooling the fruit in the shipping container. Until the advent of moisture-resistant corrugated fibreboard boxes, the containers were all made of wood. Mr. Thomas shows an approach —to ascertain the extent of cuts and bruises on peaches, and where they took place—with the fruit being shipped in different containers. His study reveals a slight advantage for the fibre box as to fruit damage, but shows a greater advantage to the shipper in other ways.

Boxes That Resist Moisture

Development of moisture-resistant fibreboard created a new possibility. Peaches may now be safely hydrocooled in such containers without the container losing any of the physical qualities or strength necessary for adequate performance.

Knowledge of this type, how-

yo compare shipping containers

Availability of corrugated boxes that withstand moisture suggests their comparison with wood baskets and wirebound boxes —showing how hydrocooled peaches fare in test shipments.

ever, is not enough. It is desirable, even necessary, to know the degree of protection afforded to the fruit by each type of container not only during the hydrocooling process but enroute to destination in some distant market. Accordingly our 1959 tests were planned to ascertain the facts about the foregoing.

SHIPPING TESTS

Containers used in shipping tests during the 1959 season were the commonly used wooden basket, wirebound crate, and the new moisture-resistant corrugated box, using vertical C-flute board for all such boxes. All were of approximately 1-1/9 bushel capacity.

A total of 24 test shipments from South Carolina to Newark, New Jersey, took place during the season. Each of these shipments included 6 baskets, 6 crates and 12 boxes, a total of 24 test containers. All of these were delivered to market during June and July.

Loading of Trailers

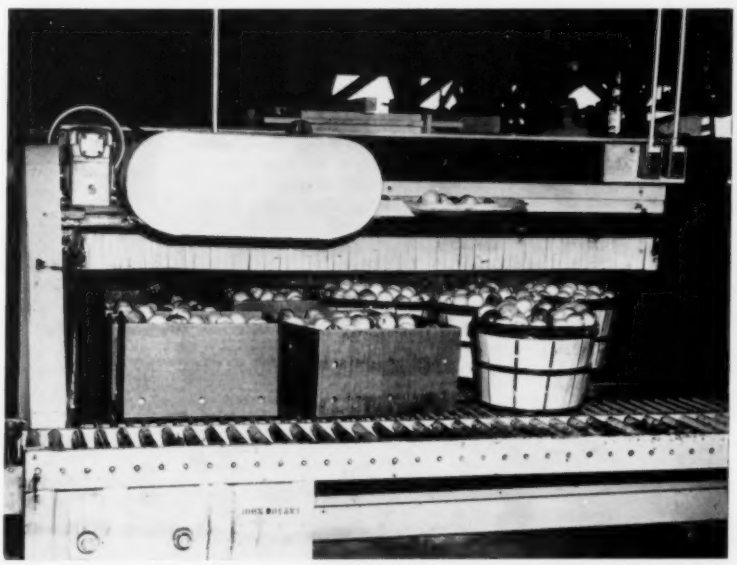
The usual practice is to load containers of fruit in trailer trucks 5 tiers high, and in staggered rows to facilitate circulation of air. Ordinarily this procedure is followed until the truck is loaded. However, when a particular truck was scheduled to carry the test containers of peaches, the top 3 tiers on the last row in the trailer were left open for these containers. It should be noted that the last few rows on a trailer are generally considered to be the worst spot in the entire load as far as shifting and bouncing are concerned.

Exactly half the fruit in each container was examined for cuts and bruises, both at the shipping point and at the point of destination. Injuries, if any, were recorded as either cuts or bruises and their surface area measured as either ¼, ½, ¾ or 1 in. or more. In this manner records were kept on injuries and summarized at the conclusion of each test shipment.

RELATIONSHIP OF SKIN CUTS AND BRUISES TO CONTAINERS

Cuts

The number and severity of skin cuts is important because they detract from the appearance of fruit



HYDROCOOLING REMOVES "FIELD HEAT" from peaches by showering them with ice water. Fruit is packed into its shippers for operation which cools center of fruit to almost 48°F.

3 Packages With Different Requirements... All Made From "Poly-Eth" 5300 Series Resins:
Texas Plastics, Elsa, Texas, made the new "Poly-Eth" chill-roll film for the carrot package. Texas Plastics also supplied the film for the frozen vegetable bag which was automatically formed and filled. Extrudo Film, Inc., Long Island City, N. Y., extruded the blown tubing for the soft goods package which was made by Package Products, Charlotte, North Carolina. (See story below:)
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Exclusive Combination Of Toughness AND 72 Extruders Have Already Used New

At last, a general purpose polyethylene film is available which possesses toughness AND sparkle AND a complete balance of other properties necessary for general purpose packaging. Made possible by the Spencer Chemical Company's development of polymorphous "Poly-Eth"* 5300 Series resins, this film has already been used by more than 72 extruders to meet many different packaging requirements.

PACKAGING EXPERTS can glance at the packages in the picture above and know that each package has different requirements.

For example, the number one requirement for the carrot package is toughness. Sparkle and optical clarity are also important.

On the other hand, the soft goods package must have outstanding gloss and sparkle, but toughness and long shelf life are necessary, too.

Finally, the frozen vegetable package not only needs toughness and sparkle, it also must have low temperature durability.

Until just a few months ago, these packages had to be made of different types of polyethylene film.

Versatile New Polyethylene Film Developed

Now, however, these three different packages can be produced from one polyethylene film—film made from Spencer's unique new "Poly-Eth" 5300 Series resins.

These new Spencer resins are the result of a major breakthrough in reactor technology which produces a truly polymorphous polyethylene resin.

One Equals Three

Because they are polymorphous, these "Poly-Eth" resins produce general purpose packaging films with three important properties: 1) Toughness for rough handling and long shelf life. 2) Sparkle for eyecatching brightness. 3) Low temperature durability for complete product protection of frozen foods.

Polyethylene film produced from new Spencer polymorphous polyethylene resin has high impact strength and tear resistance, superior gloss, and minimum haze. This film also exhibits a complete balance of all other properties necessary in general purpose packaging film.

America's Growing Name In Chemical

Sparkle Is Big Reason Why More Than Spencer Polymorphous Polyethylene

Suitable For Chill-Roll Or Blown Tubing

The packages shown above are just three examples of how extruders and converters are taking advantage of new Spencer polymorphous polyethylene's remarkable combination of properties.

The produce package and the frozen food package were made of chill-roll film (processed in the 475° F. range) and the garment package was made of blown tubing (processed in the 325° F. range).

Extensive Field Testing

Before being released for wide-scale film production, Spencer's new resins underwent extensive field tests in commercial extrusion plants and in automatic packaging operations. Under a wide variety of processing conditions, films made from "Poly-Eth" 5300 Series resins were compared with films made from leading competitive resins. In nine out of ten cases, the "Poly-Eth" films were found to be definitely superior.

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*Spencer Chemical Company markets Spencer "Poly-Eth" Polyethylene, from which polyethylene film is made, Spencer "Poly-Pro" Polypropylene and Spencer Nylon. "Poly-Eth" and "Poly-Pro" are trademarks of Spencer Chemical Company.

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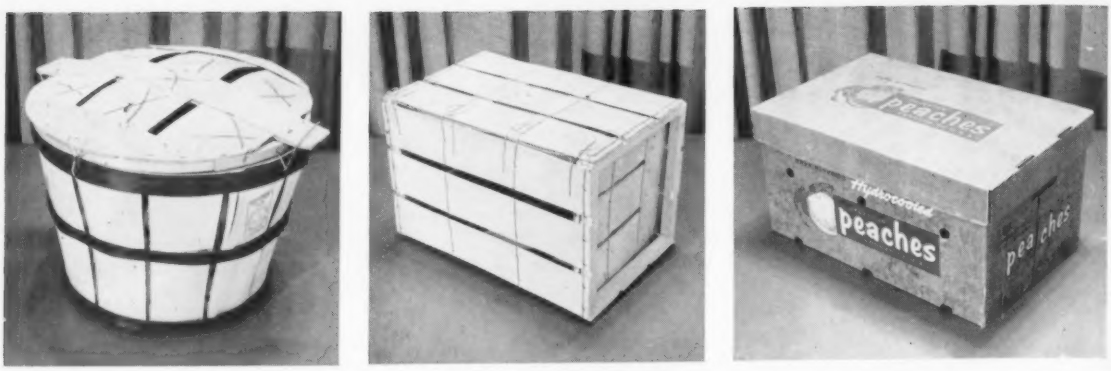

BUSHEL BASKET, WIREBOUND CRATE, MOISTURE-RESISTANT CORRUGATED FIBREBOARD BOX WITH LID (left to right) were used in tests. Note perforations to permit water to drain out.

and provide easy access for various rot-inducing organisms. Since some 3 to 7 days or more elapse between the time of picking and the ultimate sale to the consumer, ample time is available for rots to appear. Therefore, a cut of any size is probably of more economic importance than a bruise covering the same area. Thus, the influence of a given shipper upon the number and severity of cuts must be noted.

At the origin, the number of cuts per 100 peaches averaged 7.45. (See Table I.) The corresponding number at the destination averaged 8.81. The difference between the two points averaged 1.36 cuts per 100 peaches and varied from 1.02 to 1.70 depending on the kind of container. Thus, very little difference was noted in the number of cuts per 100 peaches at the shipping and destination point. Differences between containers were not significant. Observations indicate that very few, if any, cuts are caused by any particular kind of container while in transit. Since most cuts apparently occur during harvesting and packing, they are the direct responsibility of the grower and/or packer. Control measures apparently must be taken during picking, emptying, and packing.

Bruises

At the shipping point, 12.5 per cent of the total affected areas were found to be cuts only, while 87.5 per cent of the damaged areas were bruises. (See Table II.) Therefore, reductions in peach damage are possible through increased awareness of this problem by growers and packers. In damage control work dealing with bruising of fruit, three measures of bruising deserve consideration: (1) The number of bruises per 100 peaches; (2) the number of peaches bruised per 100; and (3) the bruised area (sq. in.) per 100 peaches. All three measures are considered in this article.

How Many Bruises?

Data on the *number of bruises* per 100 peaches indicate some variation among containers at the origin, destination and in transit. At the origin there were 8 more bruises per 100 peaches in baskets than in fibre boxes, and 2 more on fruit in crates than on fruit in boxes. These differences amounted to 47.6 per cent and 10.7 per cent, respectively. This same general relationship was noted among peaches in test containers at the destination. (See Table III.) Peaches in baskets received about 4 more bruises per 100 in transit than did fruit in boxes, and about 1 more in crates than in boxes. These differences amounted to only 18.3 per cent and 4.5 per cent respectively. The fact that overall, the average number of bruises at destination was more than double the number at point of origin clearly indicates the need for improvement in this phase of peach marketing.

In addition to in-transit differences pointed out, revealing differences were found in the amount of injuries to fruit at the origin among the various shipping containers prior to being placed on

TABLE I

Number Of Skin Cuts Per Hundred Peaches By Kind Of Container, At Origin, Destination, And In Transit, South Carolina, 1959

	No. Of Skin Cuts/100 Peaches		
Container	Origin	Destination	In Transit
Basket	7.08	8.78	1.70
Crate	7.49	9.06	1.57
Fibre Box	7.79	8.81	1.02
Average	7.45	8.81	1.36

TABLE II

Cuts And Bruises As Percent* Of Total Injured Area Of Fruit At Point Of Origin, By Various Containers, South Carolina, 1959

	Distribution Of Injuries (%)		
Container	Cuts	Bruises	Total
Basket	13.6	86.4	100.0
Crate	10.6	89.4	100.0
Fibre Box	13.5	86.5	100.0
Average	12.5	87.5	100.0

*Calculated on the basis of sq.in. of damaged area.

TABLE III

Number Of Bruises Per Hundred Peaches By Kind Of Container, At Origin, Destination, And In Transit, South Carolina, 1959

	No. Of Bruises/100 Peaches		
Container	Origin	Destination	In Transit
Basket	25.35	49.73	24.38
Crate	19.00	40.54	21.54
Fibre Box	17.17	37.78	20.61
Average	20.55	42.74	22.19

trailer trucks. Since all containers were filled in the packing shed by the same personnel and in the identical manner, one would expect that the amount of injuries in the respective containers at the origin of shipment would be closely correlated.

This does not appear to be the case. Therefore, other factors must account for the variation in relative number of bruises at the point of origin. Since other factors were uniform, it was logical to look to *type of container* and *lidding techniques* for an explanation of these differences.

TABLE IV

Number Of Peaches Bruised Per Hundred By Kind Of Container, At Origin, Destination, And In Transit, South Carolina, 1959

Container	No. Of Peaches Bruised/100		
	Origin	Destination	In Transit
Basket	17.35	30.24	12.89
Crate	14.59	25.65	11.06
Fibre Box	13.31	24.56	11.25
Average	15.10	26.84	11.74

Closing Techniques

Lidding operations used to close baskets and crates frequently employed force or pressure to secure the lid or top, whereas little or no force was necessary when fibre boxes were used. Furthermore, the slatted construction of both baskets and crates presents uneven surfaces which probably have a detrimental effect on fruit being placed into these containers. The bottom and sides of the fibre boxes however, were relatively smooth and without cracks and crevasses except those necessary for water drainage.

Assuming this reasoning to be correct, it seems that reductions in peach damage during packing-house operations might be possible merely by changing shipping containers or in some way altering the interior surfaces of the basket and crate. Our experience suggests that such a change would improve the quality of peaches being marketed.

Wendell H. Thomas is a graduate of Clemson College with B.S. and M.S. degrees. He has done additional graduate work at Pennsylvania State University. Prior to joining the staff of Clemson College, Mr. Thomas was with National Biscuit Company four years. He is a member of the American Marketing Association.

How Many Bruised Peaches?

Further tabulations of data were made on the *number of peaches bruised*, and a substantial increase was noted in the total number of peaches bruised between the time the fruit left South Carolina and when it reached its destination in New Jersey. However, there appeared to be no significant differences among shipping containers in the number of peaches bruised per 100 in transit. (See Table IV.)

Evidence at this point is inconclusive as to why the use of one kind of container would result in less bruising of peaches in shipment than another. One factor that might contribute to bruising is the relative height of various containers. The deeper the container, the greater the number and weight of peaches at the top which exert pressure on those peaches at the bottom of a container, thus causing bruises.

In addition, because of mounding or over-filling, fruit placed in baskets must often bear *the weight of containers and fruit stacked above*. This weight must be supported by the fruit rather than by the rim or sides of the basket, thus causing bruises and/or cuts.

When peaches are packed in crates or corrugated boxes, the fruit is not usually mounded or over-

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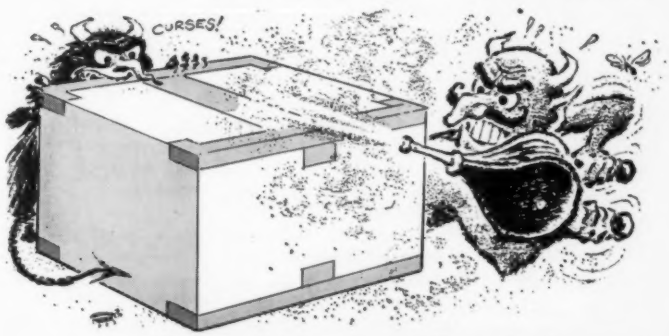

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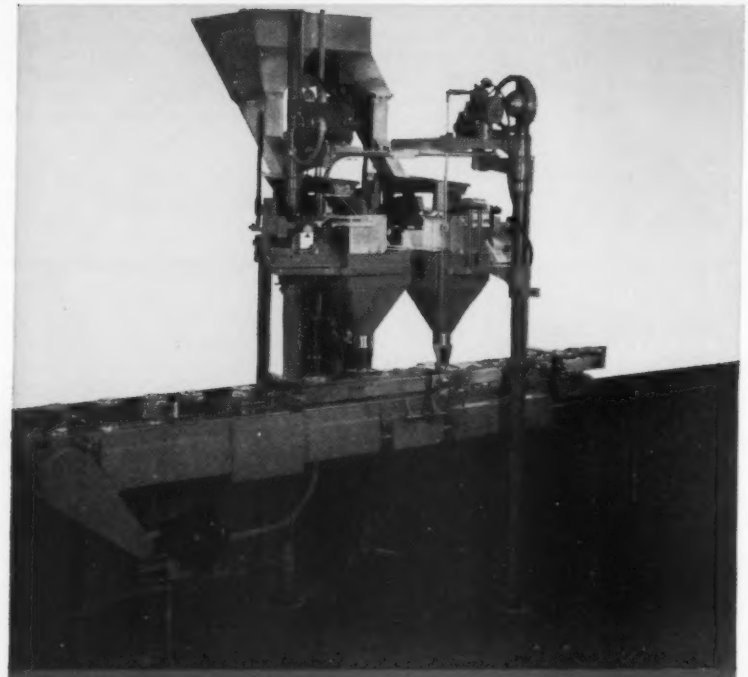

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TABLE V

Square Inches Of Bruised Area Per Hundred Peaches By Kind Of Container, At Origin, Destination, And In Transit, South Carolina, 1959

	Sq. In. Of Bruised Area/100 Peaches		
Container	Origin	Destination	In Transit
Basket	12.07	18.37	6.30
Crate	12.01	17.45	5.44
Fibre Box	10.23	17.16	6.93
Average	11.44	17.66	6.22

filled and therefore, the weight of containers and fruit stacked above is supported by the vertical sides of the containers rather than by the fruit itself. Thus, peaches in these containers are not subjected to unnecessary weight and pressure.

Measuring Bruised Areas

The third measure of the extent of bruising is *square inches of bruised area* per 100 peaches. Square inches of bruised area were computed for baskets, crates and boxes at the origin, destination and in transit. The increase in bruised area per 100 peaches in transit was from an average of 11.44 sq. in. to 17.66 sq. in. or 54.4 per cent. (See Table V.) While differences in individual container performance in reducing bruises in transit were not statistically significant, it should be noted that peaches in fibre boxes at both the origin and destination showed fewer square inches of bruises than fruit in either baskets or crates.

Temperature Readings

Prior to these test shipments considerable speculation had occurred as to whether or not the construction of, and materials used in, the test containers affected the temperature of fruit placed in them for shipment. To shed some light on

TABLE VI

Average Temperature Readings Of South Carolina Peaches In Various Containers, At Destination, 1959

Container	Temperature (°F.)
Basket	57.66
Crate	57.23
Fibre Box	58.14

this problem temperature readings of peaches were taken on 15 test shipments.

No statistically significant differences were noted among the average temperatures for the different test shipping containers. (See Table VI.) These averages were calculated from 96 temperature readings on fruit in baskets, 96 readings from crates and 162 readings from fibre boxes. The temperature of peaches while in transit, therefore, was affected little, if any, by any one of the containers tested in this experiment.

Container Capacity

One of the significant findings of this study relates to the actual number of peaches shipped in the various containers tested. Since exactly half of the fruit in each container was examined for injuries, an accurate count was automatically available on the number of peaches shipped in each of the various test containers. These data were summarized when all shipments had been completed. (See Table VII.)

TABLE VII

Number Of Peaches In Various Containers At Destination, 1959

Container	Number	Index
Basket	15,199	102.52
Crate	14,906	100.55
Fibre Box	14,826*	100.00

*Since twice as many corrugated containers were shipped as were baskets and crates, one-half of the total number of peaches packed in boxes was used as a base of 100.

More peaches were packed into a given number of baskets than in equal numbers of either crates or fibre boxes. Baskets contained 2.52 per cent more fruit than fibre boxes while crates held only 0.55 per cent more fruit than fibre boxes. On the basis of these calculations, assuming a car lot equivalent of 400 bushels, a grower or packer stands to lose the value of 10 bushels of peaches (400 x 0.0252=10) when packing in baskets and the value of 2 bushels (400 x 0.0055=2) when packing in crates as compared to packing in fibre boxes. If peaches were selling at $3.50 per bushel this loss would be either $35.00 or $7.00 per car lot.

SUMMARY AND CONCLUSIONS

A summary of data gathered on recent test shipments appears to indicate that, overall, both wire-bound crates and moisture-resistant corrugated fibre boxes performed more satisfactorily than baskets as bulk shipping containers for South Carolina peaches going to Northern markets. These new moisture-resistant corrugated fibre boxes offer peach growers and shippers a new alternative in selection of a bulk shipping container for their produce.

Peaches packed in baskets are ringed or faced; peaches packed in crates and corrugated fibre boxes are jumble packed. Therefore, in addition to reducing bruising, the use of crates and fibre boxes also offer savings to growers by eliminating the necessity for ringing or facing, thereby reducing labor costs.

(Turn page)

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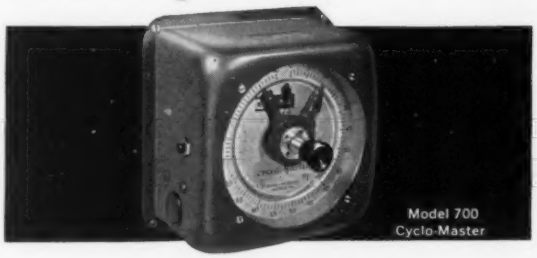

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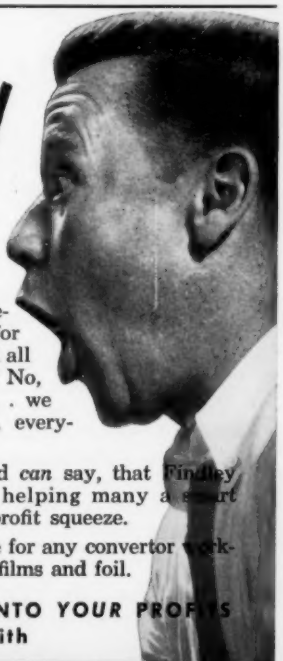

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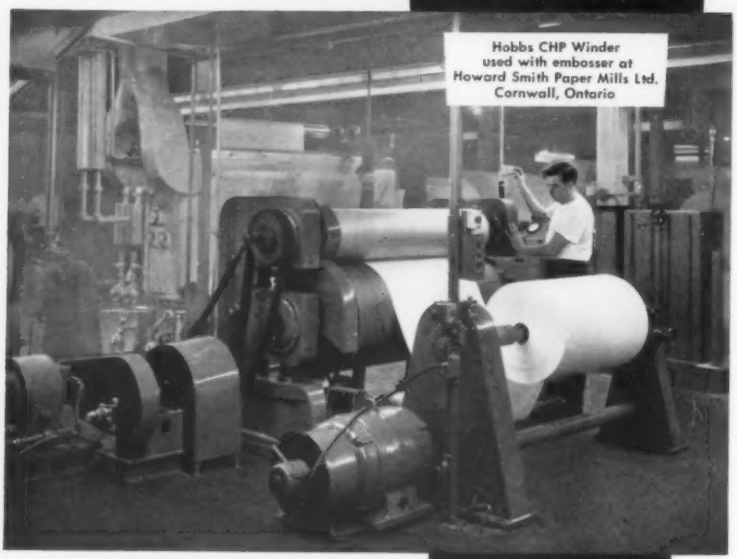

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There was no statistically significant increase in the number of cuts on peaches while in transit for any of the three styles or kinds of containers tested. The average number of cuts incurred per 100 peaches while in transit was only 1.36. Therefore, it appears that the responsibility for cuts lies primarily with the pickers and in packing house operations.

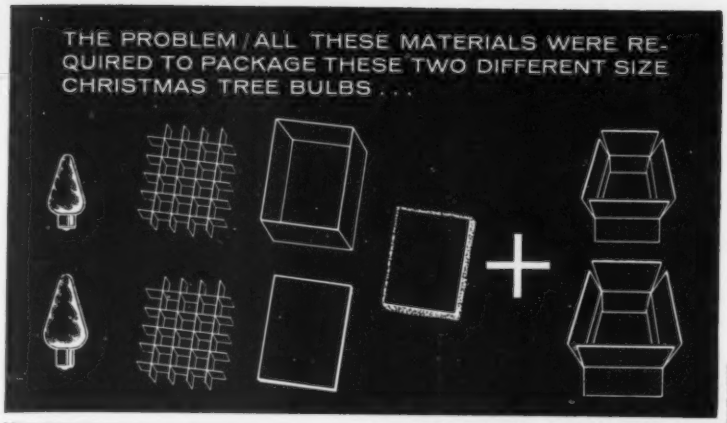
How Bruises Occur

Bruises, on the other hand, can and do appear at all stages of the picking, grading and shipping operations. One of the primary sources of bruising was found to occur during transit. The average number of bruises incurred per 100 peaches while in transit was 22.19. Baskets had 3.77 or 18.3 per cent, and crates 0.93 or 4.5 per cent more bruises per 100 peaches in transit than did fruit in fibre boxes. In transit, the average number of peaches bruised per 100 was 11.74. There was no significant deviation from this average by any of the containers tested.

Likewise, there was no significant deviation from the in-transit average of 6.22 sq. in. of damaged area per 100 peaches by the three containers used in this study. The amount of bruising at the origin was consistently less for wirebound crates and fibre boxes than for baskets, and fruit in these boxes was found to have less total bruising than that in either baskets or crates.

This same relationship was also found when peaches were examined upon arrival at destination. Since the same workers filled test containers with peaches at the same time and location these data seem to indicate that something in the physical makeup of the containers or in filling techniques was responsible for these differences in damage.

Another factor, that of temperature, was studied. A total of 354 temperature readings on fruit from the center of test containers were taken at the destination. Averages of these readings indicate that there



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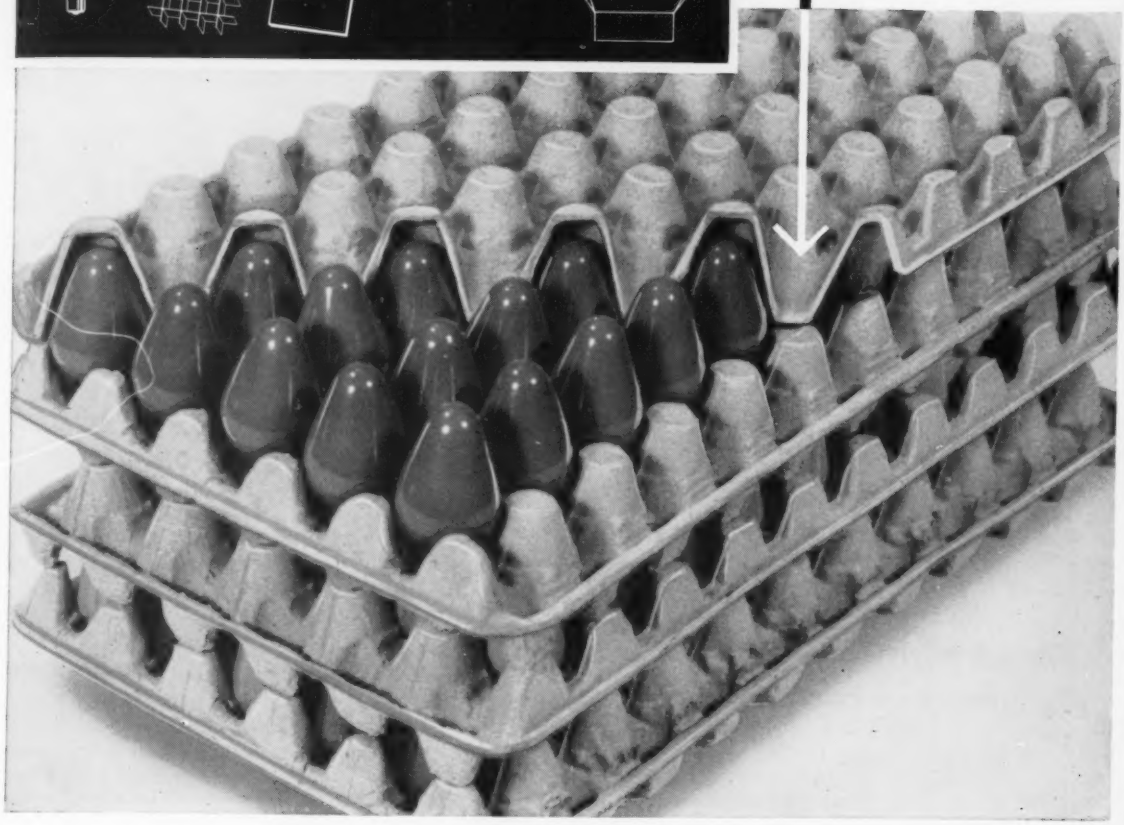

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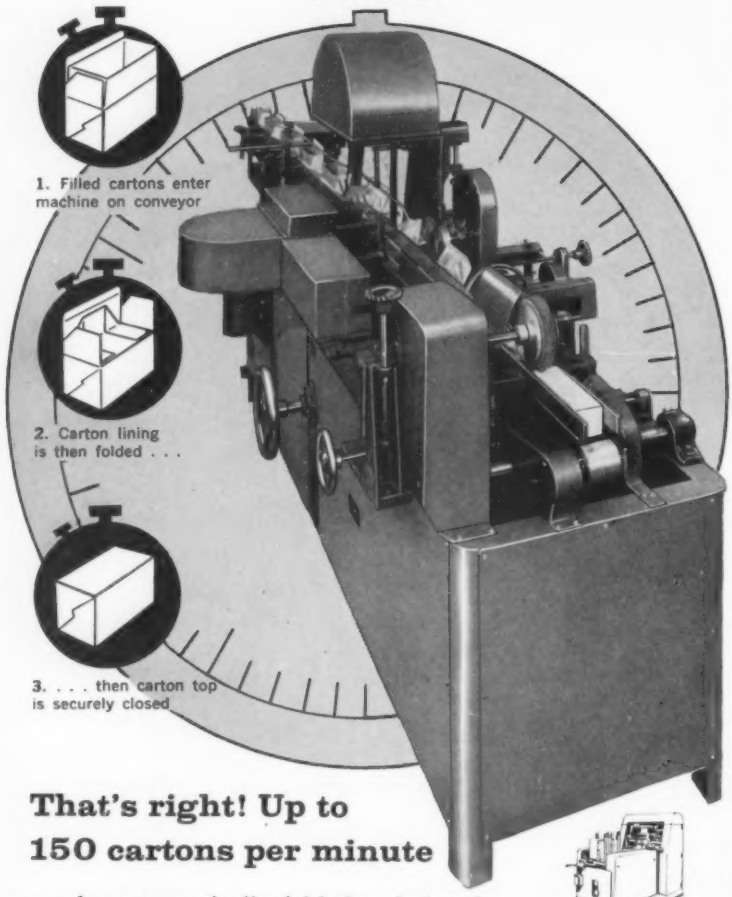
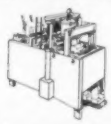


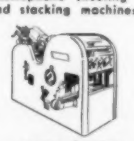
That's right! Up to 150 cartons per minute

can be automatically folded and closed by Peters Model CCY-L. What's more, it handles both lined and unlined cartons (closes 120 lined cartons per minute). And it's quickly adjustable to close a wide range of carton sizes, too! Investigate **the Peters Model CCY** for closing your cartons . . . with the Model CCY-L attachment if they're lined cartons.

high-speed carton and tray forming machines


moderate-speed carton and tray forming machines

cellophane sheeting and stacking machines


carton forming and lining machines

Ask for a demonstration or write for descriptive folder

Peters MACHINERY CO.
4700 Ravenswood Avenue
Chicago 40, Illinois

was no statistically significant difference in the ability of one container over another to hold temperatures of the fruit constant while in transit.

Capacities Vary

Of equal, if not more significance, than in-transit injuries, are findings pertaining to capacities of the three test containers. Data reveal that "bushel" peach containers actually vary in capacity. When fruit in equal numbers of baskets, crates and boxes was examined, 2.52 per cent more fruit was found to have been packed in baskets than in fibre boxes and 0.55 per cent more fruit packed in crates than in boxes. Assuming a wholesale price of $3.50 per bushel, shippers would be receiving between $7.00 and $35.00 less for fruit shipped in crates and baskets, respectively, than for that shipped in fibre boxes.

Evaluate Packaging

Better quality fruit can be placed in the hands of consumers by offering peaches with fewer cuts and bruises and also by shipping more colorful, better flavored fruit. In this respect decreases in bruising are indicated when wirebound crates and corrugated fibre boxes are used. However, any changes in container use by an individual grower or packer should be carefully planned. Markets, labor supply, and packing house equipment must be considered and plans made accordingly.

Growers and/or shippers must constantly keep in mind the likes and dislikes of consumers as well as the needs of the retail outlet. All are part of the marketing channel. For example, if warehouse operations call for palletizing, the ability of a given container to stack well should be kept in mind. Shipping fruit in containers that are standard in capacity (probably in terms of weight) further helps to establish confidence between buyer and seller. And in all operations the ultimate goal is to satisfy the consumer. *(End)*

For more information circle No. 239 on Reader Service Card, Page 119

Circle No. 240 on Card, Page 119►

A NEW IDEA IN PACKAGING

FROM AMERICAN VISCOSE CORPORATION

AVISTRAP*

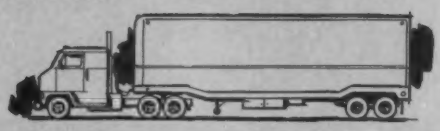
CORD STRAPPING

*Trademark of American Viscose Corporation. Patents pending.

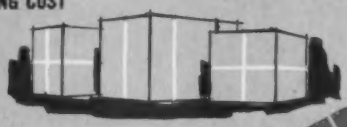
SUPER STRENGTH

AVISTRAP cord strapping is a radically new strapping material manufactured from super strength Avisco® rayon. AVISTRAP has ample strength for many applications which now require steel strapping . . . is many times stronger than reinforced tapes . . . actually outperforms steel in extensibility and impact resistance.

INITIAL COSTS



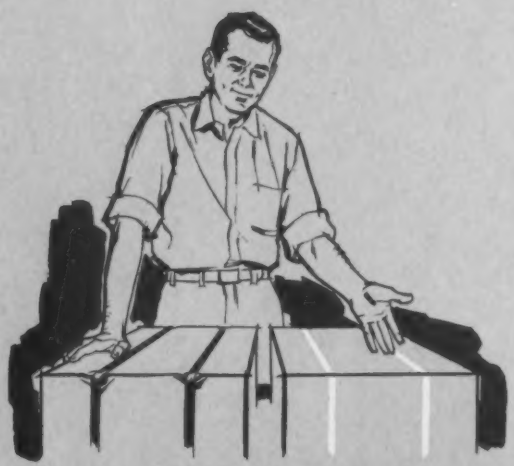
SHIPPING COST



COST PER PACKAGE

ECONOMY

AVISTRAP cord strapping gives you more strap per dollar than steel strapping . . . greatly reduces shipping costs, since it weighs from 1/7 to ¼ as much as steel strapping of comparable width. AVISTRAP also costs far less than reinforced filament tape of comparable strength. You pay less initial cost, invest far less per package.



REDUCES DAMAGE

AVISTRAP cord strapping is highly flexible, tightens around corners without cutting cartons. Properly tensioned, AVISTRAP cannot harm merchandise. And AVISTRAP will not rust.

FAST, EASY HANDLING

AVISTRAP cord strapping coils weigh approximately 21 lbs., complete with disposable spool (yardage equal to 100 lb. coil of steel strap). Coils can be changed in seconds. Just throw away the empty spool, put the new AVISTRAP coil in place. No unwrapping, no complicated changing of reels.

*Trademark of American Viscose Corporation. Patents pending.

SAFETY

AVISTRAP cord strapping has no sharp edges, cannot cut hands or otherwise injure personnel. When over-tensioned, AVISTRAP does not lash out with jagged ends. And there is no disposal hazard with AVISTRAP. It is easy to handle, and can be burned.

advantages entirely new in industrial packaging ...tested and proved by industry

Extensive testing in actual industrial use has proved AVISTRAP cord strapping delivers new savings, new safety, and many more major advantages for shippers. Just a few, in addition to others illustrated:

Because AVISTRAP cord strapping is non-metallic and cannot rust, it can replace more costly galvanized steel strapping in many applications.

AVISTRAP is easily disposed of by consignee, by burning or regular waste handling methods.

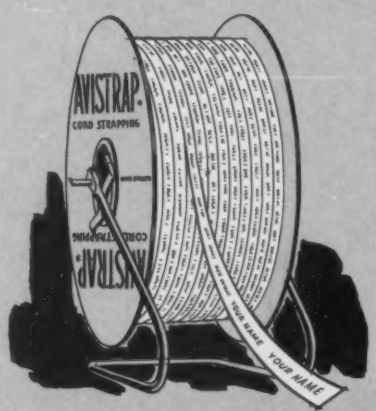
Long coil length on disposable spool means less down time on packaging lines with AVISTRAP.

AVISTRAP requires little storage space. A 1,000-yd. spool of 5/8" AVISTRAP measures 13½" in diameter, is only 8" wide, and weighs only 21 lbs.

AVISTRAP is shipped on pallets made up of easy-to-handle packages . . . single-coil or four-coil cartons.

AVISTRAP is a stronger replacement for many reinforced filament tapes, at lower cost.

For more information on AVISTRAP, tools, seals, and accessories see next page. ▶



LOW COST IMPRINTING

It costs less to imprint AVISTRAP cord strapping with your trademark or company name than to imprint steel strap. Compared with printed reinforced filament tapes, AVISTRAP shows even greater economy. Some advantages of imprinting: promotional value, quick identification of otherwise plain-looking packages, reduced pilferage.

test AVISTRAP cord strapping in your plant

All AVISTRAP cord strapping distributors are equipped to give in-plant demonstrations of AVISTRAP strapping. If you would like to make a comparison of AVISTRAP and the materials and methods you are now using, contact AVISTRAP Department, AMERICAN VISCOSE CORPORATION, for the name of the distributor nearest you.

To request more information or a sample of AVISTRAP cord strapping, use this coupon.

Name_____

Title_____

Company_____

Address_____

City_____ State_____

(Check box to indicate request)

☐ Please send me an AVISTRAP cord strapping sample.

☐ Please send application information, prices for AVISTRAP cord strapping and name of local distributor.

☐ Please contact me to make arrangements for a demonstration of AVISTRAP cord strapping in my plant.

Fast and Dependable Local Service Completes the Picture

Users of AVISTRAP cord strapping will be served by well-stocked local distributors. Immediate delivery, fast tool service and prompt access to men experienced in handling and application of AVISTRAP strapping are already available in major industrial areas. Get the name of the AVISTRAP cord strapping distributor nearest you from AVISTRAP Department, American Viscose Corporation, 1617 Pennsylvania Boulevard, Philadelphia 3, Pa.

AVISTRAP*

CORD STRAPPING TOOLS

SEALS • ACCESSORIES

AVISTRAP
CORD STRAPPING SIZES

Type	Nominal width
20	¼"
30	⅜"
40	½"
50	⅝"
60	¾"

In addition to AVISTRAP cord strapping in all sizes, distributor stocks include the full range of AVISTRAP tools . . . a wide selection of accessories, tensioners and sealers for various strapping methods and procedures. Distributors also furnish facilities for fast tool repair.

AVISTRAP*

CORD STRAPPING

To request more information or a sample of AVISTRAP cord strapping, fill in reverse side of this coupon and mail to:

AVISTRAP Cord Strapping
AMERICAN VISCOSE CORPORATION
1617 Pennsylvania Boulevard
Philadelphia 3, Pa.

*Trademark of American Viscose Corporation. Patents pending.

AVISTRAP cord strapping is a new product of AMERICAN VISCOSE CORPORATION, makers of rayon, acetate, cellophane, plastics.

Far too many units of packaging machinery fall short of meeting all expectations simply because those specifying and purchasing them fail to spell out all details for the machinery builders. Comparatively few users realize just what points are important. Many others miss the significance of adequate sampling. Striving to overcome these difficulties, the author urges greater recognition of basic premises of machinery purchasing, directs attention to product and package details, reminds his readers of the impact that planning and scheduling has on machinery usage, points out aspects of maintenance and housekeeping, stresses the effect of packaging and operating conditions on packaging machinery, and defines what an adequate sample is — all this as a basis for more intelligent machinery specifying.

Never order machinery by telephone

By Kaye Holstebro,
Manager of Sales Application Engineering,
Portland Division, Emhart Manufacturing Company,
Portland, Connecticut

Successful completion of most packaging machinery projects rests on adequate sampling, but there is much more to sampling than merely shipping a machinery builder a case or two of unit or individual packages. In broadest terms, a real sample includes the package itself, and all of the operating conditions and plant methods involved in its use. Running hand in hand with this is the importance of knowing and passing along to a machinery builder enough information about the product the package contains.

It might seem easy to dismiss difficulties by lumping them under the heading of "poor communication" and urge simply that users do a better job of interpreting their needs to machinery builders. In practice, there is much more to it than just that. A typical situation is that the user must know all about his product, its package, and its packaging conditions, and must be able to link these systematically to an articulate set of requirements for packaging machinery.

KNOW ALL ABOUT PRODUCT

Starting with the product, it is necessary to know all about its size, shape, form, consistency, firmness, rigidity, and related factors. Users often overlook these points and think that merely furnishing the builder a supply of filled, or empty, unit or individual containers is enough. It is not!

What happens to a product in the course of packaging and what the product does to a package are points meriting close scrutiny. A few specific examples deserve noting.

Suppose an operation involves the packaging of sugar: A typical packaging method uses a vibrator to settle the sugar, after which the bags thus vibrated are tipped. Sugar is a difficult product to package with any degree of uniformity. Packaging is done by weight, but the mass of the sugar being packaged varies from day to day. This is because of its moisture content. There is a continuing and constantly changing relationship between moisture content and the product itself. As a result, this expansion and contraction is a definite factor to consider in machine design because these recurring product changes can impair machine efficiency.

Designers Need Facts

Not only sugar but other prod-

Kaye Holstebro is a graduate of Odense Teknikum in Denmark. He joined Emhart in 1929 as a machine designer. His particular contributions to packaging include machines for automatically collecting and sorting packages into proper arrangements for casing.

◀ Circle No. 240 on Card, Page 119

ucts such as milk, when put into an individual package, tend to cause a bulging-out of the package. A builder must know this when he is designing a machine. Skilled engineers know how to compensate for this in the design of the machine.

In almost all *packing* equipment handling packages of an inconsistent size or shape, **the major problem is that which appears at the "shear line or parting line" in the load-forming enclosure.**

Several means to overcome this problem are:

1. **Built-in adjustability** so that the proper machine members may be set to suit the conditions on the customer's production line.
2. **Control of line pressure** on the product in the load-forming enclosure by means of "hi"-"low" limit switches or equivalent.
3. **Positive counting** of the unit packages.
4. **Application of a line brake** to restrain the line pressure after count is obtained.
5. **Means of transport** may help. For example: A carton of sugar might bulge if conveyed upright, but would not if laid on its side.

Another product often troublesome to package is a bleach. It may corrode an ordinary steel. As a result, a machine builder must use complete chrome plating on the contact members. Or it may be necessary to have a particular kind of stainless steel chain. A competent builder can select a correct metal, but he must have full information about the product being packaged so that he can choose metals that meet this product's particular requirements.

Another difficulty arises where the product is apt to change its shape or have some resiliency. There is no difficulty where the product is inherently neat or compact, or where it retains its shape, such as in the case of a solid item. But where there is a powder, a granular substance, or a resilient material (for example, tissue paper or toilet tissue), there may be difficulty on the packaging machinery.

Machine Must Compensate

Items such as the foregoing involve a condition similar to that encountered with products being loosely packed in their containers. The trouble is that a unit of machinery cannot detect individual differences. One package or roll may be fairly tight and compact while another may be loose. Since the machine itself cannot compensate for this, some other means of adjusting for it has to be provided in the design of the machine.

Similarly, almost any kind of powder settles upon going into its package. This settling normally takes place after the individual carton is sealed, but before the sealed carton goes into a shipping case. As a result, the bowing or bulging causes difficulty during the case-sealing operation. It is necessary for a designer of sealing machinery to know just what the product does to the container — for example, just how much it makes the container bulge out.

Learn Package Details

Just as with the product itself,

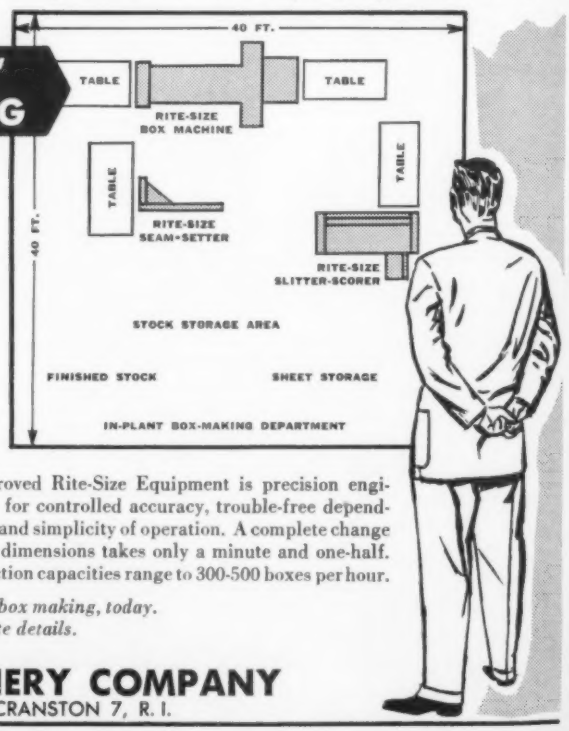
If you use corrugated boxes...in many sizes...in varying quantities... INVESTIGATE...

Rite-Size "IN-PLANT" BOX MAKING

- **Cuts unit cost of boxes**
- **Guarantees immediate availability of boxes**
- **Provides custom-dimensioned boxes**
- **Reduces box inventory investment**
- **Frees storage space for manufacturing**

Rite-Size Equipment enables you to make corrugated boxes *to your own specifications — right in your own plant!* You can make the sizes and styles you need, in the quantities you need, at the time you need them. Box production can be coordinated to daily packing line requirements, if desired.

A complete Rite-Size box department consisting of box machine, printer, seam-setter and slitter-scorer, requires only 1600 sq. ft., including ample storage space. Compare this with the space now used for box inventory alone!



Improved Rite-Size Equipment is precision engineered for controlled accuracy, trouble-free dependability and simplicity of operation. A complete change in box dimensions takes only a minute and one-half. Production capacities range to 300-500 boxes per hour.

Investigate Rite-Size "in-plant" box making, today. Write for literature and complete details.

COLT **PACKAGING MACHINERY COMPANY**
53 WASHINGTON AVENUE, CRANSTON 7, R. I.

all details of the individual package are pertinent to the design of any machinery through which these packages move. Just as important as knowing enough about the package is the matter of correct and improved specifications of its details. **A factor not all users appreciate is the cumulative effect of individual differences in packages.** For example, a slight bulge in an individual carton may be insignificant and may go undetected by the naked eye.

When you put 24 of these cartons in a shipping case, the cumulative effect of the individual differences means that the entire 24 may not fit properly in the case. This is particularly a problem with any product that tends to bulge out upon going into a carton. Many powdery products such as cake mixes, tend to settle toward the bottom of the carton.

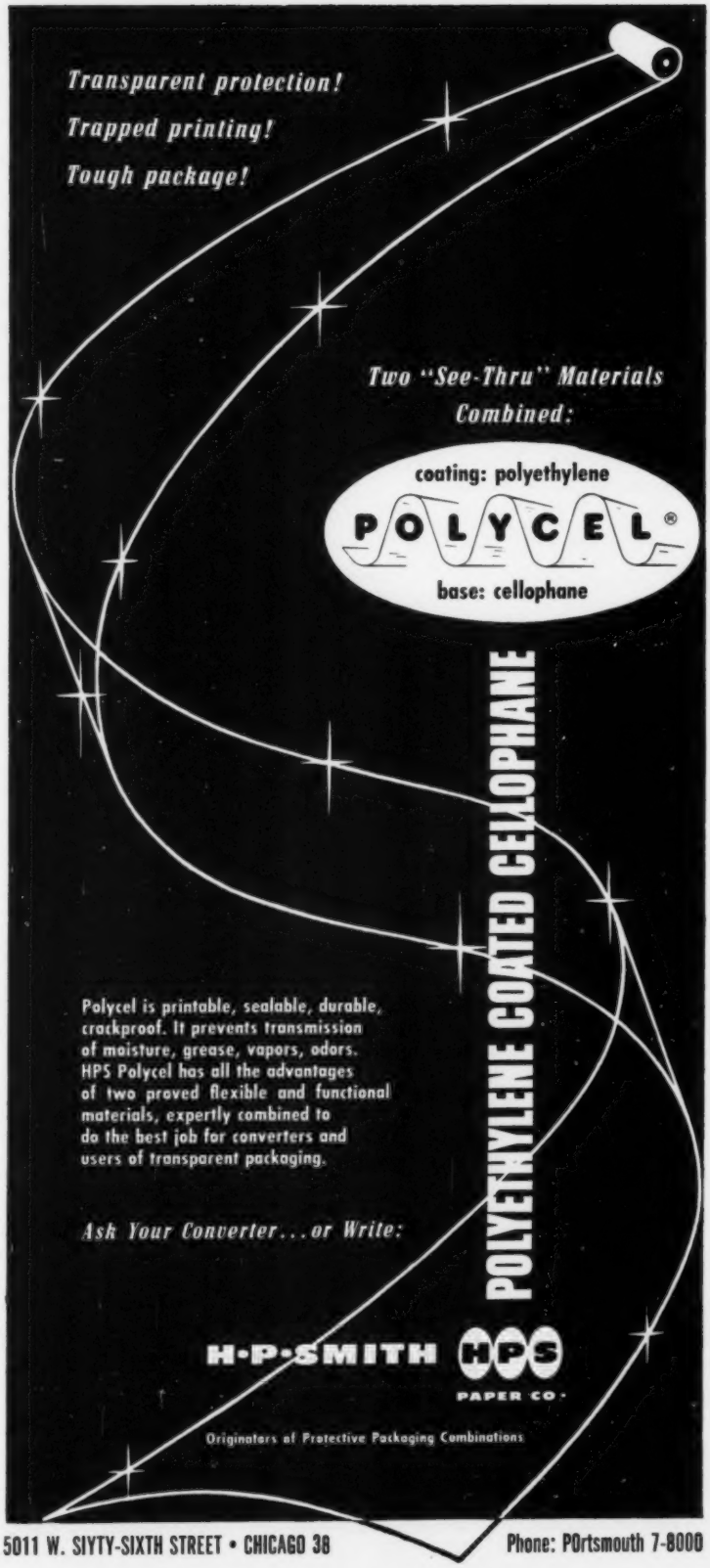
What Quality Standards?

The machinery builder must know what quality standards a particular plant is using. The user plant must fully apprise the builder of these details. There is always a danger that unrealistic tolerances may be involved and that these will prove prohibitively expensive to meet. However vital it is to have increasingly critical tolerances to meet the high-speed requirements of automatic packaging machinery, there has to be a happy medium. Some plants will have to tighten their specifications while others must relax them in order to attain practicable levels.

Some of the newer containers are causing difficulty on production lines. Many problems are arising in connection with the handling of plastic bottles on high-speed, high-volume lines. This typifies a new and growing problem area.

NEED ENOUGH SAMPLES

Pertinent to machine design is the fact that a builder must have a very large quantity of samples. Suppose these involve plastic bottles: There must be either a distinct uniformity in the cutting off


Transparent protection!
Trapped printing!
Tough package!
Two "See-Thru" Materials Combined:
coating: polyethylene
POLYCEL®
base: cellophane
POLYETHYLENE COATED CELLOPHANE
Polycel is printable, sealable, durable, crackproof. It prevents transmission of moisture, grease, vapors, odors. HPS Polycel has all the advantages of two proved flexible and functional materials, expertly combined to do the best job for converters and users of transparent packaging.
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and handling of bottle fragments or the machinery builder must have a very representative sample incorporating all possible defects or changes of conditions that might show up.

Probably the better way is to control the processing and fabricating of the bottles so that all the details, such as the gate marks or other evidences of molding are in the same place on each bottle. Uniformity in cutting off the bottle fragments may be of special concern here.

Cartons Offer Problems

Folding cartons create a host of problems, including the matter of bulging alluded to above. With corrugated boxes you get far more variations than you experience with folding cartons. There are many variations in dimension. Corrugated box makers have not used the highly detailed and relatively tight specifications such as many of the folding carton users now have.

As a result, you may get some sifting of the product into the machine. This sifting action takes place when the product flows out of the corrugated box through some crack. The point of special interest from the machinery standpoint is that the product obviously can act as an abrasive and cause difficulty in the machinery.

Automatic handling of cases demands tighter case specifications than those necessary with manual methods. There normally are changes from supplier to supplier. It is imperative that the machinery builder gets representative samples from all known suppliers of the package a user plans to run on the machine under development.

Consider Line Speeds

Further, the higher the speed of the line, the tighter the specifications (dimensions, particularly) must be. Effects are cumulative. Similarly, the end requirements for packages are becoming increasingly critical. For example, there are more and more bundling operations using a paper sleeve instead of a corrugated box. When this method is in use, there has to be a packaging operation capable of producing a very tight sleeve.

Likewise, end-opening corrugated boxes demand more accurate and representative sampling than those involved with top-opening containers. Ultimate users such as supermarkets are demanding a single layer of product in each case. This is creating a trend to end-opening cases, to cut down on board use, and still give stores the size and kind of case they want.

Other experimental efforts are doing away with dividers for glass jars. Users trying this are now putting a heavy protective band label around each jar. Some companies are using a coating on the glass itself. To package under these conditions, sampling for purposes of machine development must be more precise; the specification and development of wrapping materials must grow increasingly critical. To reiterate: The machinery builder must know what quality standards a particular plant is using.

Chaffee Heat Seal Label Applicator and Heat Sealer

A. Filled bag being put into infeed of heat sealer
B. Bag being conveyed to awaiting Label 4
C. Bag activating switch that activates placement
D. Bag entering heat sealer
1. Label folder
2. Cut label awa'ting action #1 "label folder"
3. Folded label & bag being conveyed to sealer
4. Label resting on folding mechanism
5. Twin belt label conveyor
6. Knife

NEW! Exhibiting for the first time the CHAFFEE HEAT SEAL LABEL APPLICATOR which automatically places the label header on to the filled bag; then bag and label conveyed thru the heat sealing machine on a production line basis.

See us at Booth No. 510, Western Packaging & Materials Handling Exposition, July 19-21, 1960 — Pan Pacific Auditorium, Los Angeles.

RALPH CHAFFEE & COMPANY

2358-2360 Market St. ● HEmlock 1-0807 ● San Francisco 14, Calif.

REPRESENTATIVES IN PRINCIPAL CITIES

KNOW EXPECTED USAGE

Another important feature of the machinery development process is the matter of production planning and run length. It is very important that a machinery builder know just how many hours or days the user is going to run each product.

Problems in this area frequently arise where one company tries to copy a machine it has seen in another plant and wants in its own plant. A second company wants an exact duplicate of the machine operating in the first. It orders one and the result is unsatisfactory. The trouble is that the original machine may have been built to withstand 4 hours a day of operation on a particular product and container.

The company copying it has a similar package but wants to run the machine 8 hours a day. Although containers and products

A Machine Test on Bread Packaging . . . typical of hundreds conducted on actual production-line equipment at Du Pont's Film Department Mechanical Development Laboratory.

Tests like this help Du Pont develop cellophanes that assure you top production speeds and efficiency

Bread—60 loaves a minute. Cigarettes—up to 275 packs a minute. Twist wrap candies—450 a minute. For direct wraps, overwrapping, bag making and filling and a variety of other automatic and semiautomatic applications, cellophane assures you top speeds and efficiency.

The reason: cellophane's unique balance of properties that makes it the most versatile packaging material you can use. It is static-free . . . has a wide heat-sealing range . . . gives a clean operation. It is flexible yet has a rigidity that helps give top machine performance.

Tests like the one shown above assure that you get the cellophane tailored to meet *your* needs . . . when you specify Du Pont cellophane by code designation.

When you need help, call your Du Pont Technical Representative. He is your best source of service. His reference folder, "Properties and Uses of Cellophane", can be useful to you. Ask him for a copy or write direct to E. I. du Pont de Nemours & Co. (Inc.), Film Dept. PE-6, Nemours Bldg., Wilmington 98, Del.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

DU PONT cellophane

are similar, the difference between 4 and 8 hours' operation involves choices of structural members and correct metals for machine usage. Even more difficulties arise when comparing an 8-hour-per-day operation with one requiring 24-hour "round-the-clock" operation.

Determine Run Length

As a result, a machinery builder cannot give a user company just what it needs in the way of strength and proper material selection unless he knows the exact condition, including length of run and degree of sustained operation. At the same time, it is uneconomic for a builder to assume the worst possible conditions. It would be unwise to build a machine capable of withstanding 16- or 24-hour-a-day sustained production while in fact the machine itself never will be used for anything other than steady or intermittent 8-hour-a-day production.

Hand in hand with this is knowing the details of the scheduling process at the plant. The more the builder knows about the handling of changeovers (for example, during lunch periods), the scheduling of various lengths of run, and so on, as well as details of the products being packaged, the more effectively it can relate the design and material, and component selection for a given machine to the user's particular requirements.

Weigh Alternatives

It is important that the builder know the proportions of each product being handled on a particular line. For example, if 80 per cent of the operating time is used for just two products and six other items absorb the other 20 per cent, it may be possible to devise alternate machines or even some manual methods of handling the small volume of 20 per cent. It may prove prohibitive to set up a line to handle, for example, the last 5 per cent. It may be cheaper and more effective to handle this in a completely manual operation.

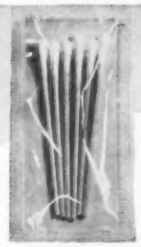
Maintenance and housekeeping as practiced in a given plant are vital details for any machine builder. It is important to know just how clean it keeps and just how much care a company gives certain equipment.

Degrees Of Housekeeping

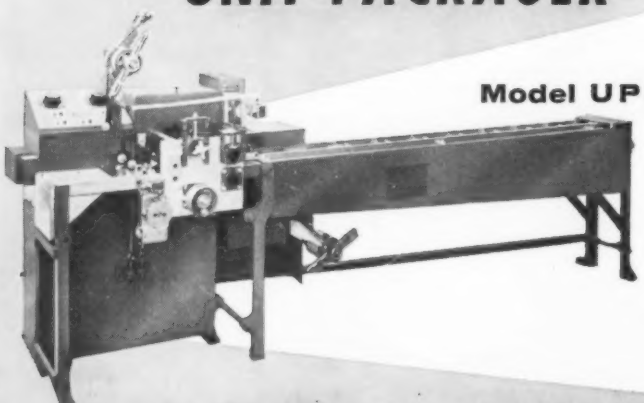
A good example of this is in the detergent industry. One plant keeps its equipment immaculate. As a result, a machinery builder does not have to do anything special or out of the ordinary to provide equipment this type plant uses, and the builder has no poor operating practices created by uncleanliness that it must overcome. On the other hand, a plant not maintaining such standards may necessitate a machine builder's installing a number of adaptations in order to operate.

In a plant that does not maintain the best of standards, it is often necessary to use Teflon tubes in twisting the carton. Further, the builder may have to line a horn or funnel with Teflon and may need to install Teflon dead plates. The

wrap-ade HIGH SPEED
UNIT PACKAGER



Typical Fin Seal Package



Model UPC-CONVEYOR FEED

Ideal for packaging small textile products, flat food items, paper goods, toys, premiums, bandages, or any other flat product under 1" thick.

ONE OF MANY

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SINCE 1932

Send us a sample of your product today for our prompt quotation.

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PHONE: PRESCOTT 3-6150

Wrap-Ade Unit Packagers are available for packaging:

- Liquids
- Powders
- Tablets
- Soft Goods
- Food Products
- Hardware

high cost of this material emphasizes that a serious problem is involved. It underscores the importance of the machinery builder's knowing enough about the package user's operating, maintenance, and housekeeping conditions.

STUDY OPERATING CONDITIONS

One of the most important aspects of an overall sample for machinery development purposes is the set of packaging and operating conditions inherent in the plant where the machine is to be installed. The user must share all of its plant operating conditions with its machinery builder if it is to have equipment that meets its needs. There is no place for plant secrecy or the withholding of information if the builder is to meet the increasingly critical requirements extant in today's packaging.

How Much Strength?

A point frequently overlooked is that of furnishing information not only on the normal packaging line operation, but also on practices involved in such phases of the work as clearing jams. The machinery builder has to produce a machine sufficiently rugged to take jamming and the aftermath of jamming.

No packaging machine can withstand rough treatment unless specifically designed for it. There has to be a reserve of strength. At the same time, it is uneconomic to build in such a reserve beyond the point of necessity. Therefore, it is necessary that the using plant adequately acquaint its machinery builder with information on such details as jam clearing techniques, if the machine is to withstand rugged practices, or concerning what safety factors are wanted.

Anticipate Peak Forces

Similarly, there has to be a reserve of strength in such devices as the metal fingers of a machine. These must be strong enough to plow through jammed cartons, or

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even cans. Guides and rails have to be strong enough not merely to move the containers, but also to take the excessive force applied when jams and breakups occur.

Another phase of the operating conditions is the problem of different products being packaged and what these do to machinery. The machinery builder must know what happens when a package breaks. Supposing a carton or container of some granular product breaks open on the packaging line: Its contents get into the works of the machine and must be cleaned out. Often there is a lot of damage and much time is lost in cleaning out the spill before production can resume. Proper specifications and adequate machine design might have averted such difficulties or it might have been possible to compensate for such instances.

Glue Is Important

Some points are so obvious they are overlooked. A typical instance of this is knowing just what glue a plant is using in its case sealing machinery. Often plant engineers and plant managers forget to give the machinery builder full information about the exact sealing glues desired. A machine can be built to handle certain ranges of glue with reasonable efficiency, but the trouble is that the glue often is the last thing the engineers think of and it frequently happens that plants dump in any glue they chance to have.

The mistake is that they assume the sealing operation will function anyway — regardless of the glue being used. This is simply not so, and packaging machinery builders face a major task of education to sell users on the idea that glue must be planned in advance.* This is so that a machine can be designed to run with certain glues or with certain ranges of glues.

*Editor's Note: Mr. E. P. McGuire, in his article, "Specifications/control of packaging adhesives" (PACKAGE ENGINEERING, 4 [1959], No. 10 [October], p. 71), stresses this point that, "... the chances are that nearly every packaging adhesive present in your plant was originally designed for a particular machine and operation. . . . For example, he [the packaging engineer] may assume that, since an adhesive performs on one model of a manufacturer's case-sealing equipment, it will also perform on similar models. **Such a path of logic is lined with operational pitfalls. . ."**

Waxes And Fluids

Paraffin sometimes is a problem. It builds up on the funnels of the machine and tends to fill up at other points on the equipment. Where it is used in the final package, the machinery builder often must have chrome plating on all contact members or use Teflon in order to get a hard-wearing surface as well as one easy to clean.

Some fluids being packaged present difficulties. One well-known beverage actually loosens the nuts on particular units of machinery. Something in the element of the product makes it loosen the nuts in much the same manner as does a cutting or penetrating oil.

Often problems arise in connection with spot gluing. Sometimes special guides or stationary members become necessary. Frequently, a plant must devise unusual practices. This merely emphasizes the importance of being sure that the user furnishes new cartons, new cases, boxes, *et al*, to the machinery builder.

Actual Conditions Control

Machine development work must be done with the same equipment and thus with the same conditions of packaging materials that will be present in the production line packaging operation. There is no other way.

Bottle packing sometimes causes trouble. It may be necessary to use a lubricant. Many plants use soap. If this is not possible, it may be helpful to have a silicone solution or something of that sort. The user has to learn what to do in order to overcome problems inherent in its particular product and its package. It is equally important that it pass along all of this information to any company building machinery for it.

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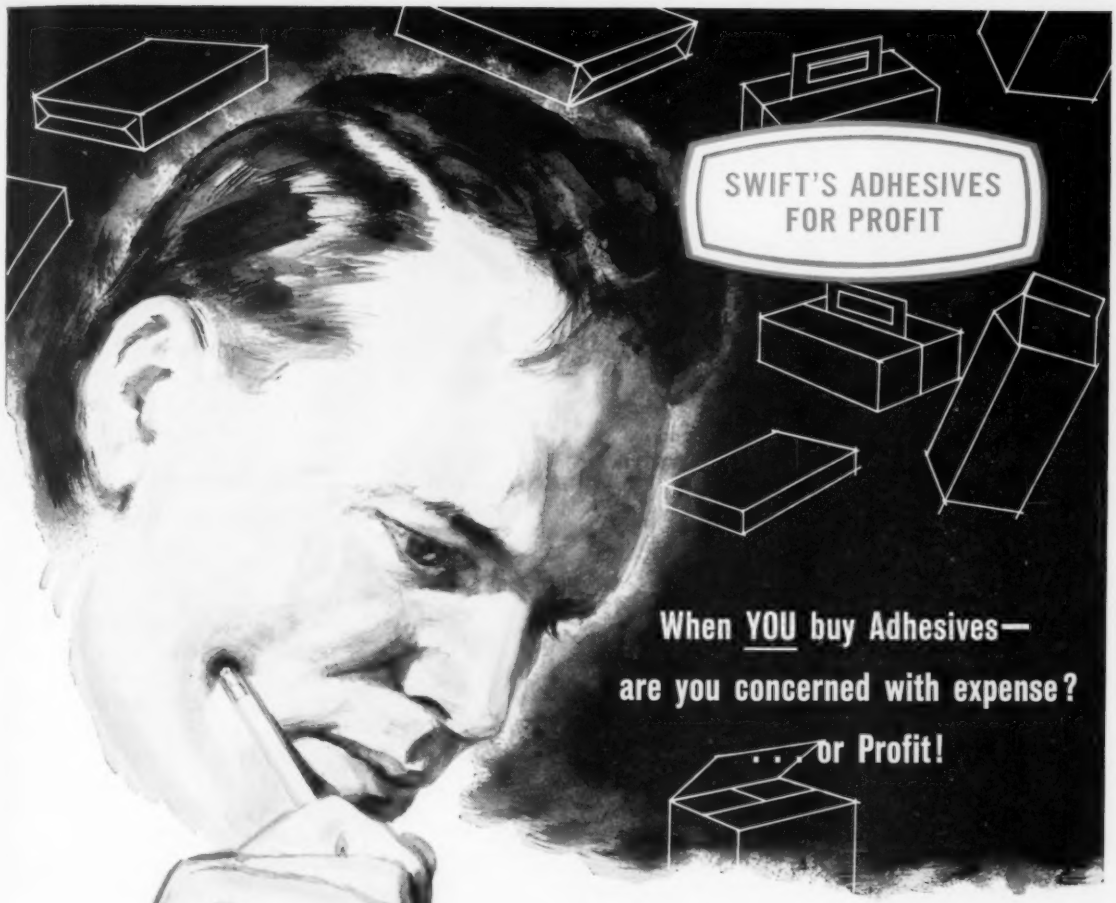

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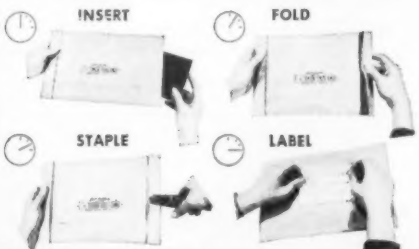

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major task of furnishing a truly adequate sample. There is more to this than merely providing a large enough number of containers. Any number furnished usually is unrealistic. The high speed of most of today's machinery makes it physically impossible for any builder to accumulate enough packages and product for more than a few minutes' operation. Having to labor under this handicap, it is all the more important that user and supplier make every effort to make the sample as realistic and as representative as possible.

Must Be Representative

Individual containers furnished for the sample must be from the same production source or operation as will be involved in the resulting packaging line. Where these samples are produced in the user plant such as on forming, filling, and sealing equipment, they must be representative. Where they come from an external supplier, such as a folding carton manufacturer, they must represent all conditions of production found in that plant.

This is particularly a problem with folding cartons. Either in the user or the supplier plant, these cartons sometimes are glued or formed improperly. Cartons may be closed on a cartoner that needs adjustment because it makes packages out of square. Careful investigation of package fabricating conditions is necessary and all of this must be passed along to the machine builder.

Use Samples Just Once

There is no categorical answer to the question of just how much to furnish. It may be necessary to have 35 or 40 cases of a particular package to have a minimum adequate sample. A particular difficulty is that you cannot use samples repeatedly. Very often users think that by furnishing a small sample of product to a builder, its engineers can then use that sample over and over again.

This is not so! The trouble is that once a carton has been formed,

closed, and used once (or — rarely — twice), it changes. The carton stock loses its springiness or resilience. The fibers begin to wear and, as a result, the carton does not perform in the same manner it would initially (i.e., when first folded or opened) in the course of a production packaging line operation.

Problems With Samples

It is bad enough that the machinery builder cannot duplicate field conditions. He is handicapped even more when he has a limited supply of product to use. On the other hand, it might be possible that, where there is a container which is firm when filled, three cases of it might be enough. All this presupposes that samples are precise and that they represent the different suppliers and the different materials from which packages for the line are being formed. Getting a correct sample requires methods somewhat akin to the sampling procedure of statistical quality control.

A ridiculous but realistic example is that of a machine builder having to test milk cartons filled with rock salt rather than milk. It simply was not practical to use milk in testing the machine. However far fetched the rock salt may seem, it represented at the time the best available substitute for fluid milk. The point is that the machinery builder does the best job he can in correctly duplicating what is to be packaged. But in this, he needs all the help he can get from the package user.

BASIS FOR DECISION

Thus, it all boils down to three points: (1) Knowing enough about the entire situation; (2) furnishing adequate information to the machinery builder, and (3) giving it the best available samples with which to develop a particular machine. It is inevitable that all this adds up to a basis for machine building decision making. The careful review of the product and packaging factors involved may suggest that various alternatives become possible.

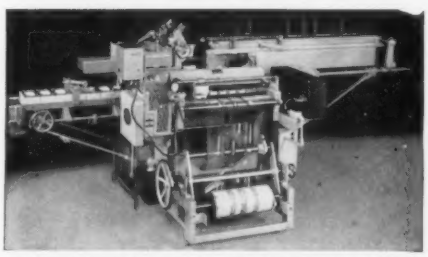
There may be opportunities to adjust or consolidate units of machinery. In one situation, it may prove better to buy a series of slower and cheaper units rather than one overall unit. Of course, the problem is that you would need three operators rather than just one, but this merely emphasizes that packaging machinery development is largely a compromising and balancing process.

Open To New Ideas?

Although it may seem too obvious for comment, the fact is that frequently a machinery builder does not know enough about the preferences and general thinking of a package user. Often this sort of information is hard to come by, and builder experts develop a sort of intuitive feel for it. They need to know whether or not a plant is open to recommendations. It may be that a machine builder can come up with a radically different approach — if the management of the plant is willing to think along these lines or is receptive to new ideas.

However evident it appears at first glance, the point is worth emphasizing that **it has been so long since some of these plant managers have had their minds stretched by a new idea that they take for granted the effectiveness of old methods.** The trouble is that it is often indelicate or impossible for a machinery builder to offer worthwhile suggestions. This is but one of the vague and intangible aspects of machinery planning, and it must be accounted for.

It all ties in with the main idea that sampling is something more than a barrel or basketful of unit containers. The more thoroughly a user delves into its packaging operation in preparing a sample, the more it becomes convinced that any sample involves the entire operating set of conditions and perhaps even the management philosophy of the company seeking the new machinery. *(End)*



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Today's trend toward greater use of laminations to protect hygroscopic materials in flexible and semi-flexible packages, makes the adhesive material in the lamination of increasing importance. The adhesive, which may be only microcrystalline wax, becomes a physical component of the lamination and may contribute much or little to the barrier effect against water vapor permeability. Mr. Peterson's study tells just how much of an effect a laminating adhesive has.

Does the adhesive help laminated water vapor barriers?

By J. K. Peterson,
Packaging Engineer,
Packaging Research and Development Laboratories,
Reynolds Metals Company,
Richmond, Virginia

Cartons for very hygroscopic materials with overwraps to provide adequate barriers to water vapor transfer often include a thin foil laminated to paper. The function of the paper is to contribute strength to the laminate, while the foil serves as a moisture barrier. To produce a laminate, however, the component parts must be stuck firmly together by some sort of an adhesive material. The adhesive thus contributes a third component layer when the lamination is a combination of foil/paper. Actually, it is a foil/adhesive/paper lamination.

The question now arises: does the adhesive contribute anything to the barrier effect of the laminate other than holding the laminants together? If one type of adhesive makes a lamination a better moisture barrier than another type, it is important to know how much better, and know it in quantitative terms.

Testing Effect Of Adhesive

To evaluate and compare the barrier effects of the adhesive materials used in making the laminations, tests were made of packages wrapped in different laminates by measuring the moisture-gain under uniform, controlled conditions. In order to eliminate all variables save those undergoing study:

(1) The cartons were filled with 200 grams of anhydrous calcium chloride which is far more hygroscopic than any product to be packaged in normal packaging applications.

(2) The tests included "blank determinations," i.e., two empty cartons, overwrapped with each wrapper undergoing test, in order to evaluate moisture-gain of the carton separately from its overwrap. This figure is deducted from the corresponding figure for the moisture-gain of the several overwrapped cartons packed with $CaCl_2$. This leads us to believe the data obtained are truly representative of the barrier effects of the several laminations.

The cartons were 5½ x 4 x 1½ in. and made of 0.015 in. bleached sulphate board. After filling they were overwrapped with the various wrappers on a Schooler Wrapmaster J-2M semi-automatic overwrapping machine with the heat-

TABLE I

Moisture Gain (Grams) Of Cartons Of 200 Grams Of Calcium Chloride, Overwrapped With Various Laminations And Stored At 100° F. And 90 To 95 Per Cent R.H. For Six Weeks

Sample	1 Week	2 Weeks	3 Weeks	4 Weeks	5 Weeks	6 Weeks
A.	0.51	1.17	1.67	2.18	2.85	3.43
B.	0.17	0.23	0.52	0.80	1.20	1.63
C.	0.62	1.57	2.55	3.58	4.82	6.46
D.	0.15	0.65	1.37	2.10	3.03	4.17
E.	1.67	3.59	5.31	7.11	8.34	10.86
F.	0.88	1.80	2.71	3.75	4.79	5.83
G.	1.30	2.95	4.42	6.12	8.11	10.14
H.	1.44	2.94	4.15	5.81	7.37	9.12
I.	2.49	4.78	7.09	7.92	10.46	13.58

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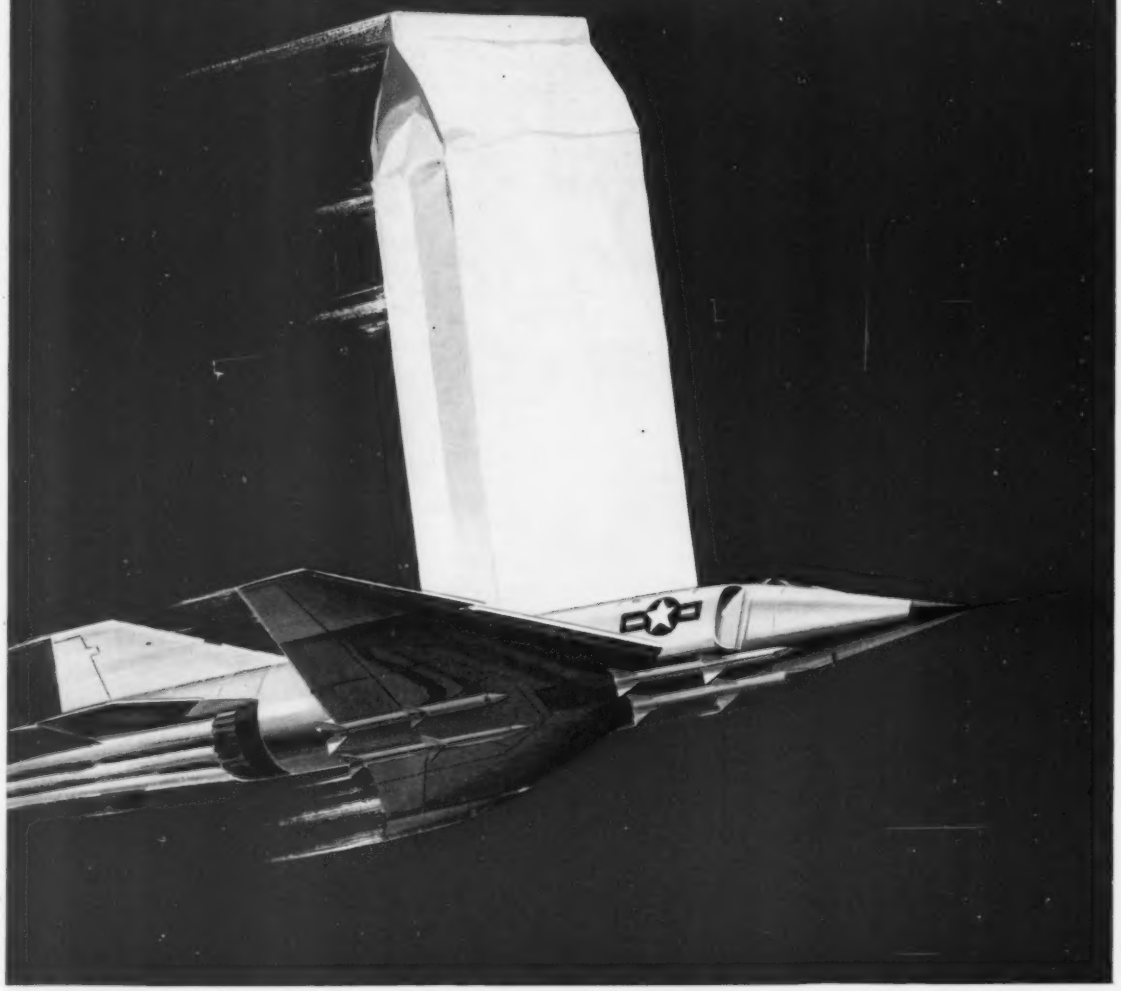

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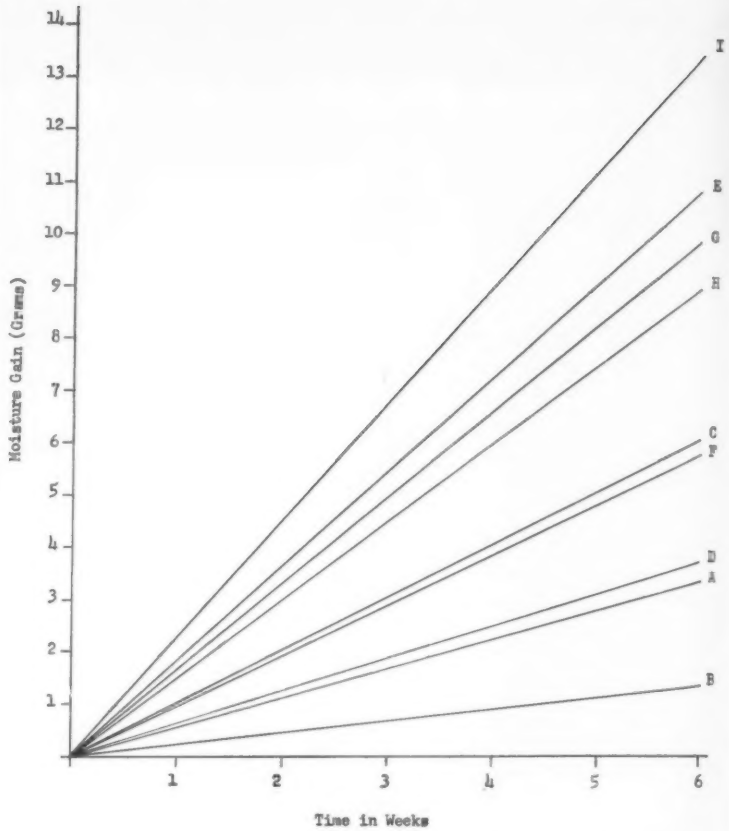

COMPARISON OF WATER-VAPOR PERMEABILITY of different foil laminations. Test conditions: Overwrapped cartons containing 200 gm. of $CaCl_2$, stored 6 weeks at 100°F., 90-95% R.H.

sealing bars set for temperatures as follows:

Side seal at 280° F.
End seal at 310° F.

This machine was used in order to duplicate production conditions as closely as possible in the laboratory.

All the overwrap materials tested were foil/paper laminations that employed either aqueous adhesives or waxes, or both, as the laminating medium. In addition to the wax on the surface the sealing mediums included:

(a) Wax bleed-through on outer tissue, e.g., heat applied to the foil side of a foil/wax/tissue lamination to drive the melted laminating wax through the tissue to effect the seal.

(b) Hot-melt coatings.

(c) Polyamide type heat sealable lacquer.

Moisture Barriers Tested

This study involved testing the following foil laminations. Listing them separately from their specifications makes comparisons easier.

A. Foil/glue/tissue/wax/tissue
B. Foil/wax/tissue/wax/tissue
C. Foil/wax/tissue
D. Foil/wax/bond paper
E. Foil/wax/sulphite paper (with registered perforations)
F. Wax/foil/glue/bond paper/wax
G. Hot melt/foil/glue/bond paper
H. Hot melt/foil/glue/bond paper
I. Polyamid heat seal/foil/glue/label stock

While the preceding tabulation gives the qualitative nature of the overwraps, the following tabulation gives the detailed material specifications:

James Kenneth Peterson is a graduate of the school of packaging of Michigan State University. Associated with the Reynolds Metals Company since 1956, Mr. Peterson's assignment within the company included nearly three years as a packaging engineer in the company's packaging, research and development laboratories.

A. 0.00035 in. aluminum foil/solid glue mounted/15-lb. tissue/21 lb. per ream wax laminated/8-lb. tissue.

B. 0.00035 in. aluminum foil/8 lb. per ream wax laminated/12-lb. tissue/17 lb. per ream wax laminated/8-lb. tissue.

C. 0.00035 in. aluminum foil/15 lb. per ream wax laminated/8-lb. tissue.

D. 0.00035 in. aluminum foil/17 lb. per ream wax laminated/20-lb. bond paper.

E. 0.00035 in. aluminum foil/16 lb. per ream wax laminated/24-lb. supercalendered sulphite (registered perforated).

F. 4 lb. per ream of wax/0.00035 in. aluminum foil/solid glue mounted/25-lb. bond/8 lb. per ream of wax.

G. 3 lb. per ream of hot melt/0.00035 in. aluminum foil/solid glue mounted/25-lb. bond paper.

H. 6 lb. per ream of hot melt/0.00035 in. aluminum foil/solid glue mounted/25-lb. bond paper.

I. 3 lb. per ream of polyamid heat-seal coating/0.00035 in. aluminum foil/solid glue mounted/30-lb. label stock.

Results Of Tests

We base the following discussion on the results of the testing as reported in Table I, and graphically represented in Fig. 1.

1. The foil/wax/tissue/wax/tissue (B) had less than half the total moisture gain expressed in grams of the next closest material, foil/solid glue/tissue/wax/tissue (A). Since the same gauge of aluminum foil was used in all the wrapping materials, it would appear that the double wax lamination of B and its higher quantity of wax, totaling 24 lb. per ream, was the cause of the better showing.

2. Both of the foregoing tests (A and B) 3-ply materials showed up better than the 2-ply materials. The increased amount of wax explains this; also other reasons, such as wax saturation of the inner tissue to form another barrier in the case of the material B, and partial wax saturation of the inner tissue in the case of material A.

3. On an overall basis it is apparent that wax laminations result in considerably better barrier materials against moisture gain than solid glue laminated materials. Even the addition of overwaxes, hot melts, or heat-sealable lacquer coatings to solid glue mounted materials does not compensate for the absence of the wax lamination.

4. Comparing the results from the overwaxed (F) material to the hot melts (G and H), the barrier effect of the wax is fairly obvious, since they were both used with the same base stock, 0.00035 in. aluminum foil/solid glue mounted/25-lb. bond paper.

The overwaxed overwrapped material showed up considerably better than the two hot-melts—a result that seems to be due to the amount of wax used. A total of 12 lb. of wax/ream was used in the case of the overwaxed material, compared with 3 lb./ream and 6 lb./ream in the case of the hot-melts. It is worth noting that the 6 lb./ream of hot-melt material did not afford significantly more protection against moisture gain than did the hot melt material having a weight of 3 lb./ream.

5. The registered perforated material (E) was supplied with enough laminating wax to afford adequate protection against moisture gain, but the higher permeability it showed was probably caused by the registered perforated material that did not permit sufficient bleed-through of wax into the sealing areas as compared with the open porous type tissues and papers used in A, B, C, and D. We reach this conclusion because the heat-seal bars produce nearly instantaneous seals when in contact with the sealing areas.

6. The polyamide lacquer heat-seal coatings produced adequate end and side seals. But the body of the sheet was not, however, comparable to a wax laminated material in the degree of moisture protection it afforded. The possibility of polyamide coating on the foil side of a material similar to A or B to effect a seal in the foil-to-foil areas is excellent.

Summary

Use of microcrystalline wax in aluminum foil/paper laminations effects an excellent barrier to moisture. Use of wax, or overwax, or hot-melt coatings will fill pinholes in the foil, and will act as a separate barrier. In some cases, they will saturate the tissue and thereby produce an additional barrier. Aqueous adhesives and heat-sealable lacquer coatings can function as laminating or heat-sealing mediums respectively, but, for the most part are inadequate barriers for protecting hygroscopic products.

(End)

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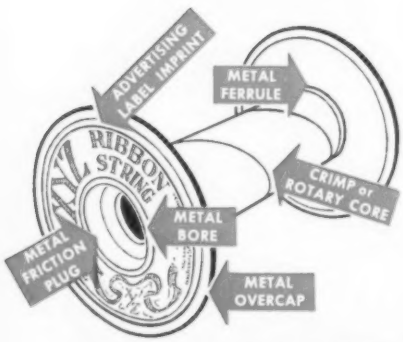

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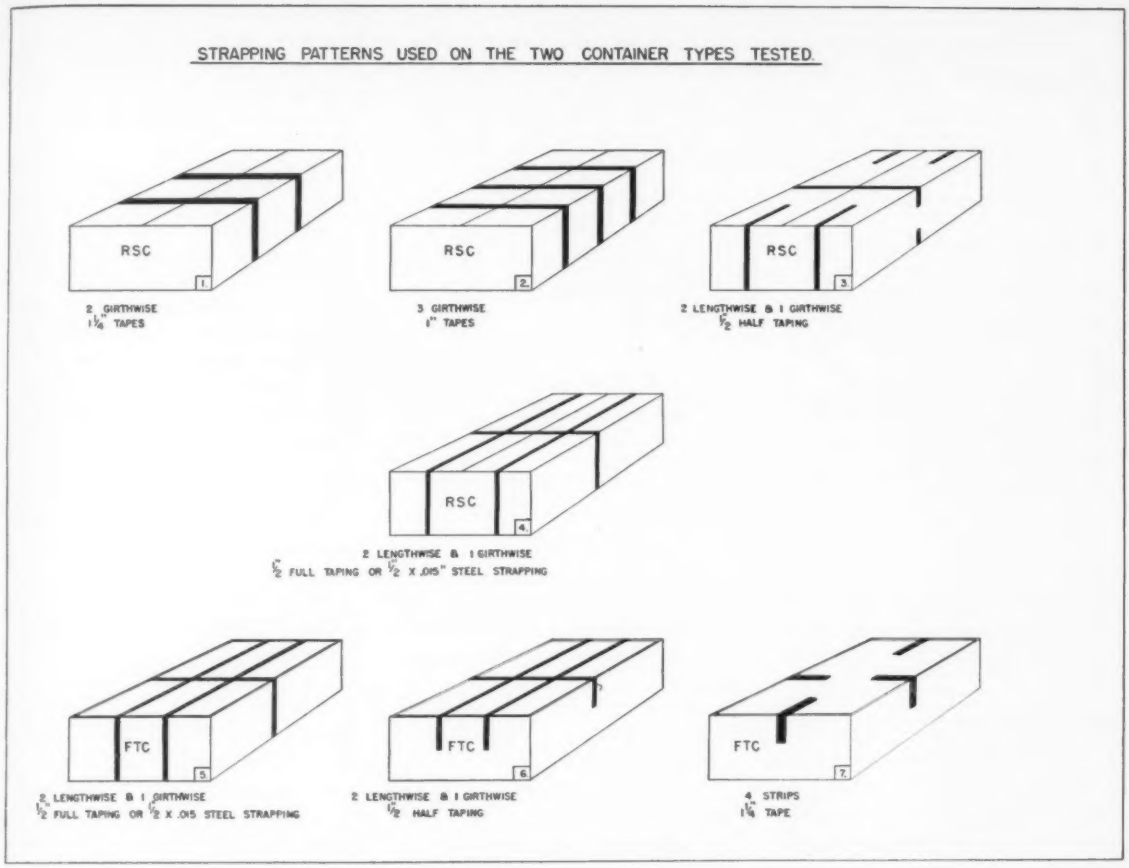

1 STRAPPING PATTERNS used in studying effectiveness of various patterns, and in comparing pressure-sensitive tape with steel strapping.

Pressure-sensitive tape or steel strapping?*

Test results show what additional strength you get as you vary taping and strapping patterns on regular-slotted and full-telescope fibreboard shipping containers

By John O. Younger, *Container Technologist, Research and Methods Analysis Branch, Container Division, Quartermaster Food and Container Institute, Chicago*

Pressure-sensitive tape strapping has been used by the Military on occasion to replace steel strapping, in specific applications. Apparently, this new tape has performed successfully. Its use is increasing and diversifying. Tape is being employed at present for closures, for strapping unitized loads, and for reinforcing containers that require such added strength. Other uses will no doubt be developed.

What is now needed is information on which reliable procedures for applying pressure-sensitive tape can be established. The present study was undertaken in an attempt to pioneer this neglected area. Objectives were: (1) to study and interpret the effectiveness of various taping patterns, and (2) to compare pressure-sensitive tape strapping patterns against steel strapping patterns, using similar

*This paper reports research undertaken at the Quartermaster Food and Container Institute for the Armed Forces, QM Research and Engineering Command, U.S. Army, and has been assigned Number 1075 in the series of papers approved for publication. The views or conclusions contained in this report are those of the author(s). They are not to be construed as necessarily reflecting the views or indorsement of the Department of Defense.

TABLE I

Container Variables Evaluated In Study Of Strapping Patterns Of Pressure-Sensitive Tape And Steel Strapping*

Strapping Pattern	Strapping Material Width (in.)	Regular-Slotted Containers†		Full-Telescope Containers†	
		No Strapping	Steel Strapping‡	Tape Strapping‡	Steel Strapping‡	Tape Strapping‡
2L & 1G, full strap	½	V3c (4)	V3c (4)	V3s (5) V3c (5)	V3s (5) V3c (5)
2L & 1G, half strap	½		V3c (3)		V3s (6)
2G	1¼		V3c (1)		
3G	1		V3c (2)		
4 strips	1¼				V3s (7)
Control		V3c			

*Evaluated under room conditions of temperature and humidity, except that one V3s and one V3c, FTC container with 2L & 1G full tape strapping (½-in. width tape) were evaluated after a 24-hr. rain spray conditioning.

†Numbers in parentheses refer to patterns shown in illustration.

‡Steel strapping 0.015 in. thick.

‡Tape similar to Type IV of Federal Specification PPP-T-97c, entitled, "Tape, pressure-sensitive adhesive, filament reinforced."

loads. As a control, non-strapped, sealed RSC containers, loaded as were the tape- and the steel-strapped containers, were employed.

EXPERIMENTAL

Materials

Reinforced pressure-sensitive tape strapping and steel strapping were the primary materials. The tape used was a weather-resistant pressure-sensitive tape for heavy duty packaging, similar to Type IV of Federal Specifications PPP-T-97c.† Tapes in widths of ½, 1, and 1¼ in. were used. The steel strapping used was ½x0.015 in., galvanized.

Two basic types of containers were used, the full-telescope (FTC) type and the regular-slotted (RSC) type. Containers were made with two different grades of fibreboard. One group of containers with no strapping at all was used as a control. Fig. 1 shows the various strapping patterns investigated.

All patterns were not used for all fibreboards and container types. All test containers were of laboratory manufacture of approximate size 26½ x 16½ x 11 in. (inside dimensions).

†Federal Specification PPP-T-97c, entitled "Tape, pressure-sensitive adhesive, filament reinforced."

‡Federal Specification PPP-B-636, entitled "Boxes, fibre."

Containers were manufactured in two grades of material: (1) V3s weather-resistant solid fibreboard, and (2) V3c weather-resistant corrugated fibreboard, C-flute. Material requirements conformed to those listed in the present Federal Specification PPP-B-636.‡

The RSC containers were made with a stitched manufacturer's joint. For the FTC containers, the flaps were stitched in the manner described in the specification referenced above. The bottom flaps of the RSC containers were stitched, while the top flaps were sealed with a water-resistant adhesive meeting specification requirements of MIL-A-101A.

Methods

Steel strapping was accomplished by a hand operation so that no accurate method of tensioning was possible; however, to all intents and purposes, it may be assumed that strapping procedures used and degree of tension applied to the straps, prior to application of the seal, were consistent with usual commercial practices.

The test load used in the evaluation study was mimeograph paper with a basis weight of 20 lb., size 8 x 13 in., wrapped 500 sheets per package with 16 packages per case. The individual reams were wrapped with a single sheet of lightweight kraft paper which fractured in several places when the shipping container had withstood 8 drops from a 30-in. height.

To reduce the waste of the test load, it was decided to wrap the individual reams of paper with several thicknesses of heavy-duty pressure-sensitive cloth tape. The study undertaken was not made with the intent of determining the type of pack best suited to protect reams of paper, but rather to determine the ability of the shipping container to withstand cumulative shocks of a given magnitude, without fracturing the strapping media, or incurring tears or score-line damage to the container itself.

The net weight of the paper used approximated 89 lb. Gross weight of the container dependent upon grade of fibreboard used, varied between 102 to 106 lb., depending upon the type of container, container material, and strapping used.

Over the series of tests, the gross weight tended to increase slightly since the individual reams of paper were inspected after each test, and, if any tears were present, the packages were taped over the torn areas. This weight variation was not considered a significant factor in the relative performance of the different test containers.

With the exception of two containers evaluated after a 24-hr. rain spray conditioning, no standard conditioning atmosphere was used for the other containers. They were tested under room conditions of temperature and humidity.

Evaluation

With the exception of a single group, the evaluation was conducted using six test specimens for each strapping variation (including no straps), although not necessarily for each of the two grades of fibreboard used. For rain spray conditioning, a single container was tested for each of the grades of fibreboard, and in only one strapping pattern. See Table I, for details on groups tested.

All containers were subjected to a 30-in., corner drop test. Con-

TABLE II

Summation Of Container Damage For All Six Replicates In Study Of Strapping Patterns Of Pressure-Sensitive Tape And Steel Strapping*

Fibreboard Variety	Strapping Pattern	Degree Of Damage†															
		Regular-Slotted Containers‡										Full-Telescope Containers‡					
		No Strapping				Steel Strapping#				Tape Strapping§				Steel Strapping#				Tape Strapping§			
		A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
V3s	2L & 1G full strap													(5)	6	5	1 0	(5)	6	5	2 6
V3c	2L & 1G full strap					(4)	6	3	1 0	(4)	1	0	0 3	(5)	3	1	0 0	(5)	3	1	0 3
V3s	2L & 1G half strap																	(6)	6	6	3 6
V3c	2L & 1G half strap									(3)	1	0	0 0								
V3c	2G									(1)	3	0	0 0								
V3c	3G									(2)	4	3	0 1								
V3s	4 strips																	(7)	5	4	1 4
V3s**	2L & 1G full strap																	(5)	1	1	1 0
V3c**	2L & 1G full strap																	(5)	0	0	0 0
V3c	Control	4	5	4	-																

*Note that, while test groups were of six containers each (with exception of the two single container tests), the damage record does not necessarily total six. Reason: No damage or broken tapes on some of the test subjects.

†The interpretations of the four arbitrary damage columns are as follows:

A. Number of containers out of the test group having one or more tears or cuts greater than 1 in. in length and less than 6 in. (minor damage);

B. Number of containers out of the test group having one or more tears or cuts 6 in. or greater in length, yet less than a full or complete scoreline tear (moderate damage);

C. Number of containers out of the test group having one or more complete scoreline tears (major damage);

D. Number of containers out of the test group having broken straps or tapes, or tapes torn loose from the container.

‡Numbers in parentheses refer to patterns shown in illustration.

#Steel strapping 0.015 in. thick.

§Tape similar to Type IV of Federal Specification PPP-T-97c, entitled, "Tape, pressure-sensitive adhesive, filament reinforced."

**One container only, tested after 24-hr. water spray conditioning.

tainers were numbered to conform to requirements of Federal Specification PPP-B-636 which uses the corner drop test in evaluating container performance. For identification of container faces and scoreline edges, the numbering system established by ASTM in its method D775-47 was used.

Drop testing was accomplished using an Acme Drop Tester. Containers were dropped directly on a concrete floor.

RESULTS AND DISCUSSION

End Point Of Test

In view of the higher-than-usual weight of the test load, an arbitrary end point for the testing was established as 24 corner drops. Establishment of the arbitrary end point has precedence because, in the initial development of the present Federal Specification PPP-B-636, the criteria for successfully passing the drop test requirement was that a box should withstand a minimum of 12 drops. In selecting the 24-drop arbitrary end point for this investigation, it was considered appropriate for laboratory evaluation because, even under adverse shipping conditions, it would be most unusual if a container would suffer as many as 24 drops from a 30-in. height, from origin to destination.

Before definitely establishing 24 drops as the end point for testing, a few containers of both types of fibreboard investigated were dropped to the point where one or more complete scoreline failures were obtained. Accomplishing this required over 40 drops from the 30-in. height. To continue to this point seems rather needless since, if no failures were obtained before this point, it would seem to indicate that the test load was more than satisfactorily packed. By terminating all testing after 24 drops, one can still distinguish between the efficiency of various types of reinforcement, by the amount of damage accruing at this end point.

Table II shows, in condensed form, a summation of the container damage for all tests made. In this summation, End Points A, B, C, and D, listed in the table, effectively show the number of containers having damage up to, and including, the limitations imposed by these four end points.

As an example, for the V3s FTC container strapped two lengthwise and one girthwise with steel strapping, all six of the containers had a 1- to 6-in. scoreline cut; five of the containers suffered damage of greater than a 6-in., and less than full, scoreline cut; one of the containers had a full scoreline tear. No straps were broken. Information on the other containers is shown in a similar manner in the table.

Although only a single container for each type of fibreboard was tested after rain spray conditioning, these two tests were indicative that the tape could remain securely adhered to the container after 24

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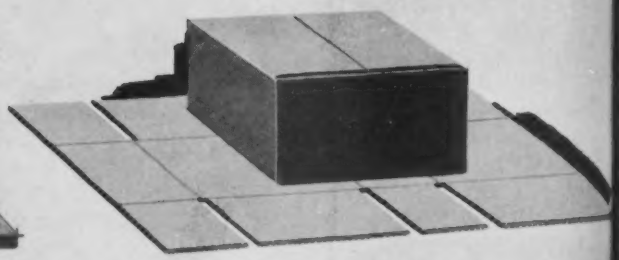

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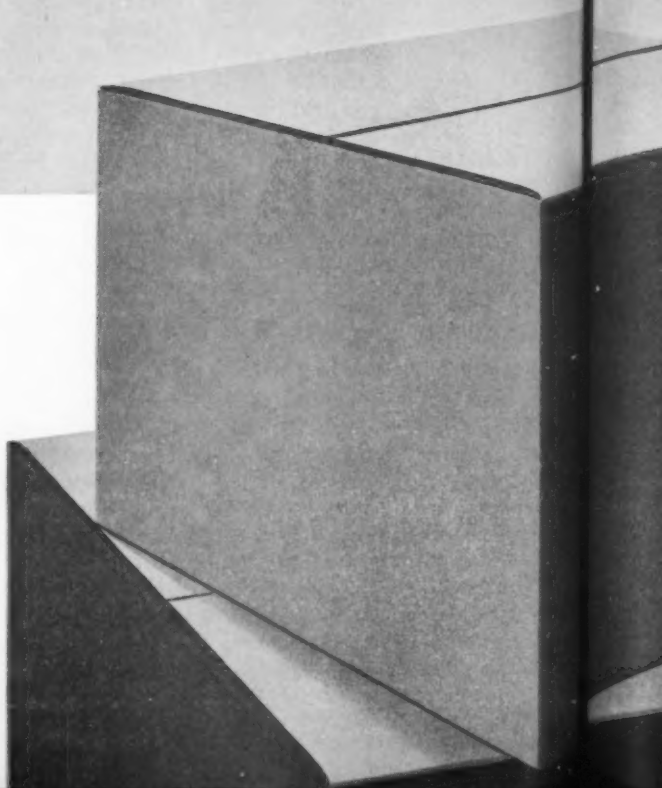

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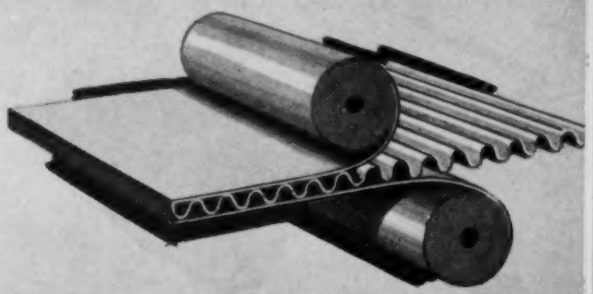

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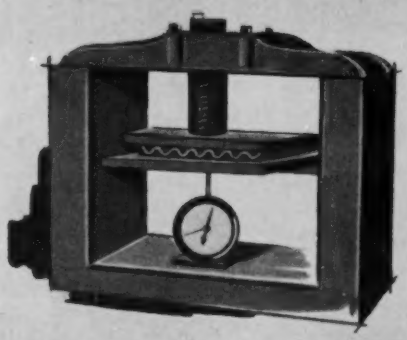
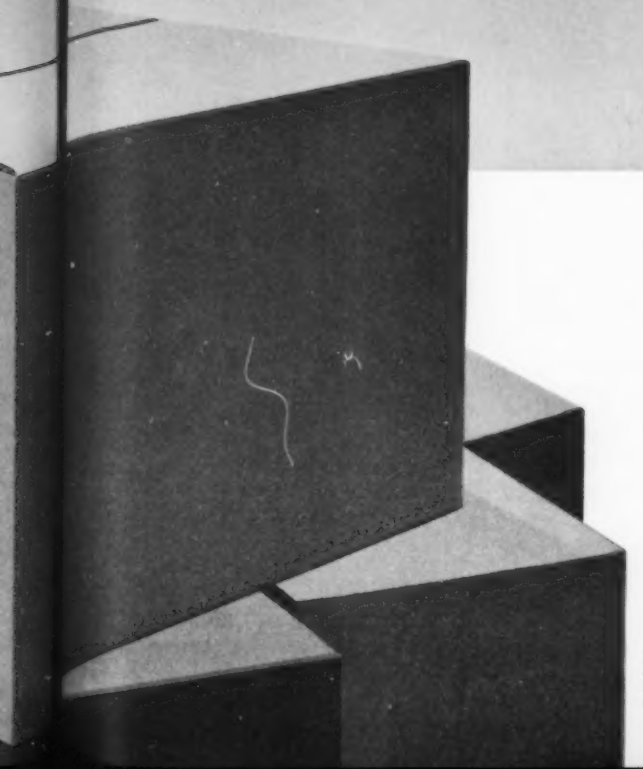


TESTING



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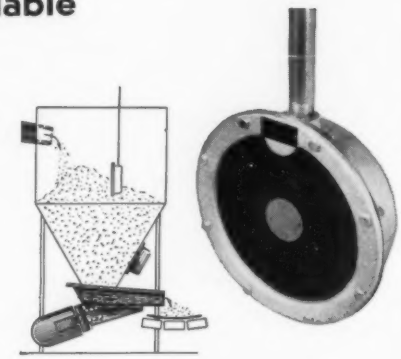

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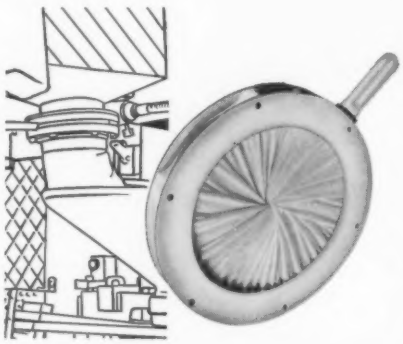

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hr. of exposure to such conditions.

In general, then, the table shows the difference between V3s and V3c containers. Also, the reinforcing effects of the various types of tape and steel strapping are shown, using as a comparison the group of containers having no steel strapping or tape reinforcing.

CONCLUSIONS

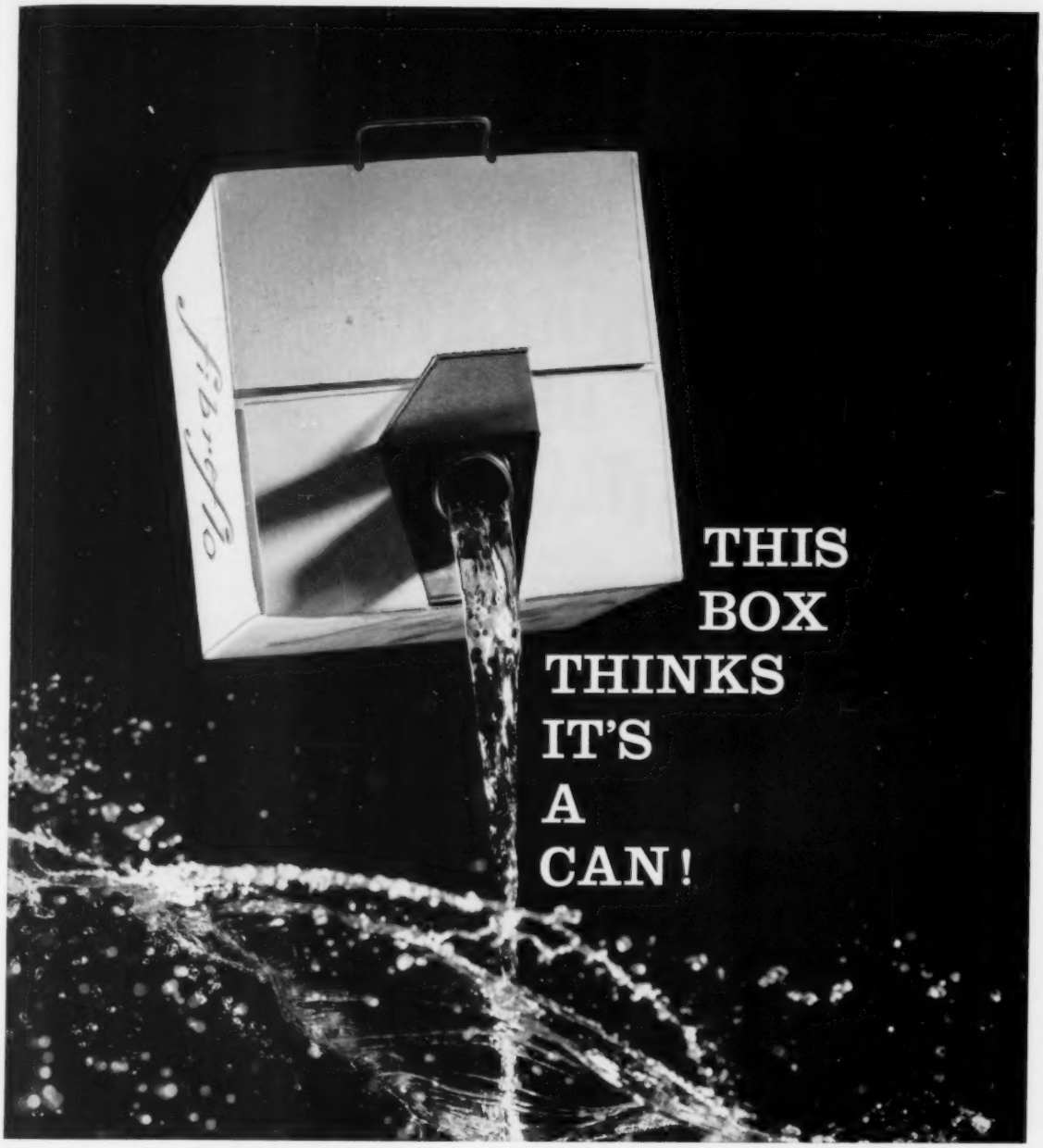
1. The results show that less damage is suffered by the V3c corrugated container than is accrued by the V3s solid fibreboard container. While it is true that only the full-telescope containers were examined for the effect of fibreboard, by extrapolation of the data it would appear entirely reasonable that the same results would apply to other container types.

2. With respect to the same test groups discussed in Conclusion 1 above, and not withstanding the fact that tape straps were broken, the damage accruing to a container reinforced with tape strapping at the conclusion of the 24 drops was no greater than that accruing to the container with the steel strap reinforcing. In terms of cuts and tears after 24 falls, it might be said that scoreline failures (full scoreline, 6- or 1-in. tears) were no more evident in the steel strapped containers than in those reinforced with tape.

One may then conclude that tape reinforcing *applied in this pattern* and *with this type* of container gives adequate protection for loads up to, and including, the test load used, namely 100 lb. It should also be considered that the test load used was one that would be representative of a group of items such as paper, clothing, linens, etc.

Effects of strapping variations and container styles would not be directly translatable for items such as canned subsistence or a loose difficult load such as nuts and bolts (Type 3 load).

While it is highly probable that, with continued dropping, the tape strapped container would fail sooner because of rupture of the tapes, the 24-drop test cycle used



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John O. Younger is a graduate of Lawrence College with a B.A. degree in chemistry. Before joining the Quartermaster as a packaging technologist, he was with Institute of Paper Chemistry, Northern Regional Research Laboratory, and Munising Paper Co. In 1957 Mr. Younger was awarded a Secretary of the Army research and study fellowship. To pursue research he proposed under the fellowship, he attended Michigan State University's school of packaging, receiving his M.S. degree in 1959. Mr. Younger is a member of Technical Association of the Pulp and Paper Industry and Packaging Institute.

is considered equivalent to the handling encountered in military handling and transportation under most conditions.

3. Use of four strips of tape is more effective with the FTC container than the half strapping. It must be considered in drawing this conclusion that the strips used were 1¼ in. wide, while the half strapping was ½ in. wide.

Selection for the widths was based on specification requirements with respect to four strips and, on trial usage, with respect to the ½-in. wide half strapping. Productionwise, it would probably be as efficient and economical to use the four shorter pieces of the wider strap as it would the three longer portions of the narrow width tape.

4. The use of two or three girthwise straps would appear to be practically as effective as two lengthwise and one girthwise fully strapped containers. While it is true that a greater amount of minor damage accrued, in no instance were full scoreline tears achieved.

No attempt has been made to draw lines of distinction between lesser damages accruing for the four variations of tape strapped RSC container. One might conclude with reasonable certainty that one strapping pattern was as effective as another and that economic factors would be the determinant in deciding which one to use.

5. That both steel and tape reinforcing contribute heavily to reducing the damage of a container after 24 falls is made very evident by the damage accruing to the unstrapped control group.

6. The improved performance of the V3c containers over the V3s containers strapped with tape, both under the conditions of room temperature and after water spray, may quite possibly be attributed to the differences in the finish of the outer liners. In the solid fibreboard, the finish is generally higher than with the corrugated board. This may be either intentional in that larger amounts of beater sizing or calendar sizing might be used; or it may be because of the manufacturing process in that heavy pressure is used in combining the solid fibreboard so that some polishing of the exterior portion would be accomplished.

This extra polish or finish adversely affected the adhesive qualities of the pressure-sensitive tape. In dropping and scuffing on the floor or other surface, tape is partially removed more easily from the solid fibreboard containers than it is from the corrugated.

7. With but a few exceptions, all previous conclusions are based on the termination of testing after 24 falls. It would appear to be entirely reasonable to assume that such degree of rough handling would be adequate to assure safe arrival, especially since, in the development of federal specifications on weather-resistant fibreboard and their military specification predecessor, 12 falls were considered as a suitable amount of rough handling.

It is, of course, obvious that, if for any reason the 24-fall termination of testing is not considered adequate rough handling, the gradual breakage of the tapes will eventually lead to severe container damage and/or spillage of contents. The fracture of a steel strap for this weight of load is a rare occurrence. *(End)*

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Simple forms and methods control packaging inventories

By Raymond E. Horton,
Packaging Supervisor,
Cape Ann Fisheries, Inc., Gloucester, Massachusetts

Unusual problems of controlling the inventory of packaging supplies exist in the fish business. These problems are caused by the uncertainties of the supply of the raw material—fish, which are caught only at certain seasons and arrive from the sea in small shiploads. Some species of fish are caught and processed during the summer months but, as winter arrives, these fish disappear.

Hard To Plan Inventories

Due to inclement weather conditions, the fishing vessels are unable to search for them. Hence, in winter, other species of fish are more easy to catch and process. The No. 1 problem is that our industry must depend on the unpredictable supply of raw material rather than upon the demand for its products.

Because the supply of raw material is unpredictable, the job of maintaining the correct inventory of packaging supplies is difficult. In contrast to our situation, a meat packer, for example, knows fairly well how many meat animals are

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2 PURCHASE REQUISITION tells more than just quantities needed. Note spaces "on hand" and "will last." Department heads thus must apprise purchasing department of need.

Controlling the inventory of packaging materials for perishable products arriving in not-very-predictable varieties and often with little advance notice, can be difficult. Mr. Horton shows how the use of three simple forms coupled with workable control procedures, helps solve this problem. The simplicity of his company's system should appeal to any one facing a comparable task of inventory control.

in existence and where they are. If the meat packer will pay their owners enough, the animals will be sent to market. In this way the arrivals of animals can be regulated and the demand can be satisfied.

Fishing vessels, on the other hand, can sometimes drag for days on end and not catch enough fish to pay for the trip. Yet on another voyage they may fill their holds to capacity in a few hours. The fish processor must bear this possibility in mind while controlling its packaging material inventory. It is better to be over-supplied than to run short.

Cooperation Is Vital

This unpredictable nature of the raw material supply requires a keen sense of cooperation between the fish buyer, all department heads, and the purchasing agent, plus the understanding of the various packaging suppliers. An illustration of what can happen, and has happened within this unpredictable industry, is shown by the almost complete disappearance of one fish species—mackerel.

About 25 years ago this species was caught in great quantities along the Atlantic seaboard. Suddenly mackerel began to disappear from the fishing grounds. Nobody seems to know what happened to them. Further, the processor never knows when, or if, these fish will return.

There is always the possibility that a sizeable amount of this fish may be caught and delivered to the fish plants with no advance warning other than that which can be transmitted by ship-to-shore telephone. It is imperative, therefore, that the inventory of packaging supplies for this species be maintained in order to avoid spoilage or any delays in processing.

Competitors' Borrowings

A unique problem that characterizes the fishing industry is the constant borrowing of supplies between one processor and another. A company may have an adequate and balanced inventory of packaging materials for its own expectations, but a sudden overload of fish may bring a call for help from a competitor.

Under these circumstances the competitors come to each other's assistance. This mutual aid complicates the control of the inventory of packaging materials when it happens, and it is doubtful if a similar problem exists within any other industry.

Typical Needed Items

Packaging materials range in many sizes and shapes. Shipping containers into which the fish are packed range from 1 lb. up to many sizes of bulk packs, the heaviest weighing 50 lb.

Sizes of each unit package are usually standard throughout the industry, thus making exchange of packaging supplies possible. The average fish plant will maintain the following inventory and if the plant runs short it must know where the desired materials can be picked up on short notice:

1. 1-lb. standard carton
2. 1-lb. open face tray
3. 1½-lb. standard carton
4. 3-lb. printed carton
5. 5-lb. printed carton
6. 10-lb. printed carton
7. 5-lb. plain carton
8. 10-lb. plain carton
9. 3-lb., 5-lb., and 10-lb. customer cartons
10. 13½-lb., 16-lb., 30-lb. cartons for bulk and block freezing.
11. 20-lb. tin cans for fillets that are to be sold fresh (unfrozen).

Usually printed cartons are kept on hand for each species of fish that the processor handles. The amounts of packaging materials carried on the inventory are usually related to the expected catch of the species. In addition to the overwrap bearing the processor's label, it is also supplied with the private labels of its various customers which are used when that particular species is processed.

(Turn page)

INVENTORY _____ PAGE ____

SHEET NO. _____ PRICED BY _____

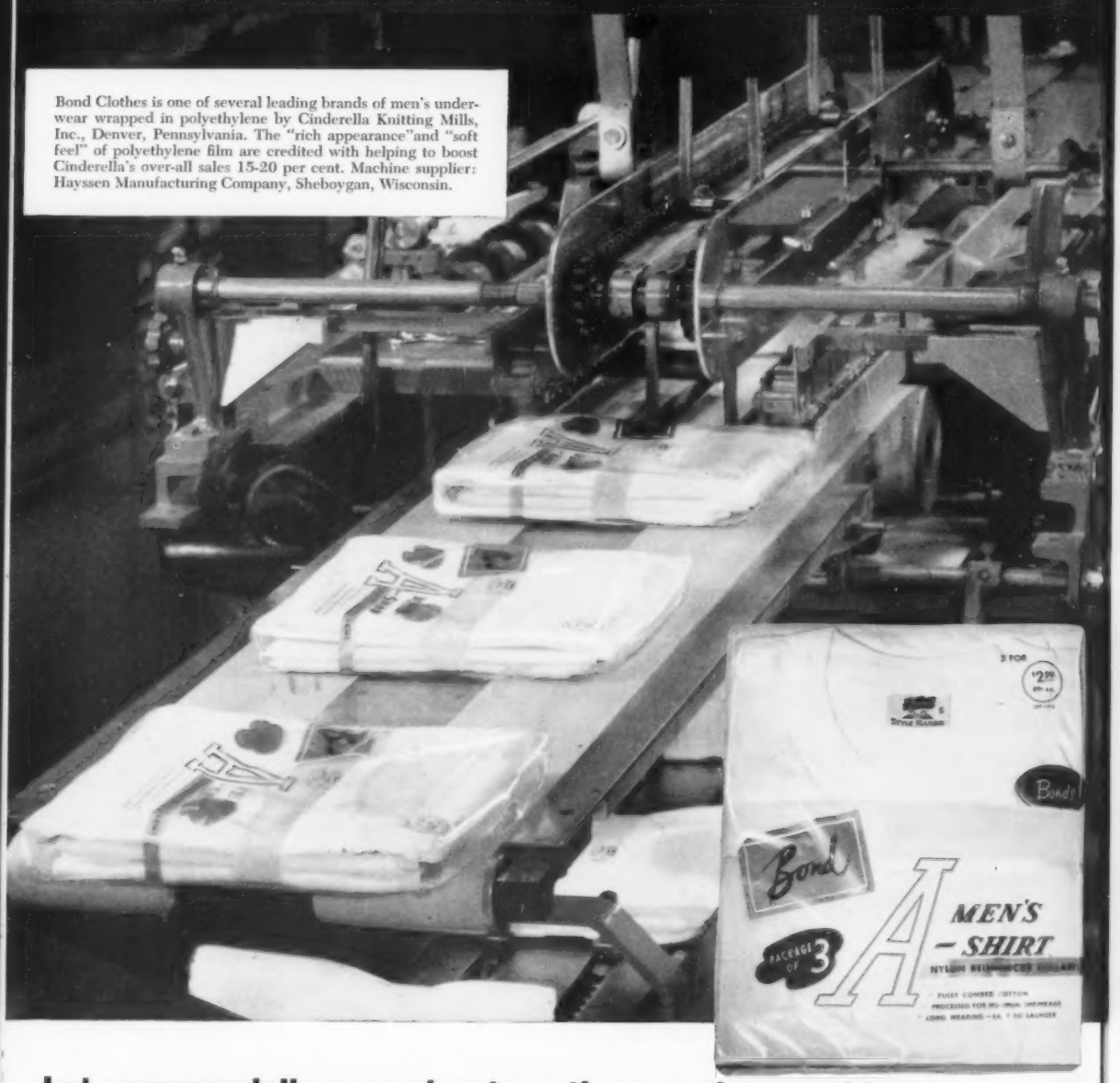
CALLED BY _____ DEPARTMENT _____ EXTENDED BY _____

ENTERED BY _____ LOCATION _____ EXAMINED BY _____

CHECK	QUANTITY	DESCRIPTION	✓	PRICE	UNIT	EXTENSIONS
		AMOUNT FORWARDED				

3 **PHYSICAL INVENTORY FORM** must be filled out and reported to purchasing every 30 days. It ties in with use of daily stock sheet in maintaining control of materials.

NOW... polyethylene film can save you more money than ever!



Bond Clothes is one of several leading brands of men's underwear wrapped in polyethylene by Cinderella Knitting Mills, Inc., Denver, Pennsylvania. The "rich appearance"and "soft feel" of polyethylene film are credited with helping to boost Cinderella's over-all sales 15-20 per cent. Machine supplier: Hayssen Manufacturing Company, Sheboygan, Wisconsin.

Let commercially proved automatic wrapping machinery put polyethylene's economy into your packaging

If you have put off switching to polyethylene packaging until automatic polyethylene overwrap machines came of age—you don't have to wait any longer. Machines like the "Hayssen" 51-HP above are operating round the clock—bringing polyethylene's advantages to production-line wrapping of stationery, paper towels, napkins, paper plates, handkerchiefs, men's underwear, baked goods, you name it.

Advantages such as sales-stimulating sparkle, softness, clarity and printability; long storage life, unique moisture-gas transmission, low-temperature toughness, inertness to most chemicals . . .

And economy: Assume you are using this "Hayssen" machine to wrap 6 million packages per year sized 6¼" x 8" x 1½". Your savings using 1.25 mil standard clear film made of BAKELITE Polyethylene would approximate $14,000—compared to the use of conventional film.

Ask any of the leading makers of high-speed automatic polyethylene overwrap machines how much his machine will return on an investment geared to your needs. And get our two new booklets of facts and figures about automatic polyethylene packaging. Write Dept. BF-101, Union Carbide Plastics Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. *In Canada:* Union Carbide Canada Limited, Toronto 7.

UNION CARBIDE

BAKELITE and UNION CARBIDE are

Fish Supply Governs

Here again one can readily see that it is the supply, rather than the demand for the finished product, that controls fish packaging.

Varieties of fish for which the processor and its customers carry supplies are listed below:

1. Ocean Perch
2. Haddock
3. Cod
4. Flounder
5. H & D Whiting
6. Whiting Fillets
7. Catfish
8. Pollock
9. Fillet of Sole
10. Mackerel
11. Scallops
12. Cooked & Breaded Fish Sticks or Portions

Use Of Overwraps

Overwraps for the various small unit packages are of all types and are designed for use on Hayssen, Battle Creek, and Package Machinery equipment. Rolls of overwraps are of various sizes and many colors, and usually are of waxed paper. The small unit previously referred to as a "tray" is an open carton requiring a plain cellophane overwrap, thus assuring the visibility of the product.

Besides the overwraps for the small units, there are various wraps that are used on 5- and 10-lb. cartons. These wraps are sheets of plain cellophane with a separate printed label and are used to protect the fillets within the cartons.

Many of the more plentiful varieties of fish use a sheet of printed cellophane overwrap which is less expensive than a combination of a separate printed label plus a plain cellophane overwrap because of the increased rate of production. The standard pack in a 5-lb. box of fillets will include five individually wrapped unit packages of approximately the same size, but the weights will not be quite uniform. The same will be true of the 10-lb. box except that the number of wrapped units would be ten.

Use Of Inserts

As is the case with the smaller units, the packaging supply inventory must contain inserts for each variety of fish and a corresponding number of plain cellophane sheets. Each 5- or 10-lb. package must contain printed instructions to various retailers to weigh each package prior to sale. This is to protect the consumer and is referred to as *notice to retailers.*

In addition to the problems of the average packing department, we must also bear in mind the packing of the cartons of the frozen finished product into their various master shipping containers. These also are of many sizes, shapes and have different weight capacities. Some of them may hold 48 lb., or 4 12-lb. small masters, in one large outside shipping container. Others would be a single shipper holding 24 1-lb. cartons, or even a single master containing the aforementioned 12 1-lb., or the entire 48 1-lb. packages.

Some of the shippers are printed for a specific customer while others are interchangeable and can be used for many customers and for all species of fish. The 5- or 10-lb. cartons require another type of master container usually carrying a total of 50 lb. The 1½-lb. units are also packed in different size containers.

Control Of Inventory

The usual procedure places control of the corrugated master container inventory within the freezing department. It is that department's responsibility to maintain the proper balance of inventory with respect to the other packaging sup-

SUPPLIES INVENTORY CONTROL

Date

SUPPLIES RECEIVED

Quantity	Item	Shipper

SUPPLIES USED

Quantity	Item	Quantity	Item

SUPPLIES SHIPPED

Quantity	Item	Customer

4 **DAILY STOCK SHEET** is filled out each day and reported to purchasing. Its use helps to prevent error or difference in end-of-month figures of physical inventory.

Raymond E. Horton entered the fishing business in 1935 and since then has been associated with the various departments of the Cape Ann Fisheries, Inc.—including the handling of fresh fish for shipping or filleting and for packaging and freezing. In 1941 he was promoted to his present position making him responsible for the quality of the company's packaging and product.

◄ Circle No. 261 on Card, Page 119

†AviSun certifies that Olefane meets conditions of F.D.A. regulation on use of polypropylene for food packaging.

AviSun OLEFANE*

POLYPROPYLENE FILM

SPARKLING SALES APPEAL. Crystal clear, with brilliant gloss. Just the right flexure . . . neither too limp nor too stiff. Shows off foods to their best advantage. Prints beautifully, too!

BETTER PROTECTION. Amazingly strong even in thin gauges. High resistance to tearing and abrasion. Ideal odor and moisture barrier. Keeps freshness and flavor in, odors out.

LONGER PROTECTION. Since Olefane does not become brittle or deteriorate with age, longer shelf life is possible for your products. (And your roll stock in storage will always be fresh and useable.)

MACHINES SMOOTHLY. Has just the right stiffness and slip to perform smoothly on wrapping machines designed for thermoplastic film . . . *plus a non-critical heat seal range.*

MORE FILM PER POUND. Highest yield of any packaging film. A real opportunity for savings.

LEARN MORE ABOUT THIS VERSATILE NEW PACKAGING FILM... AviSun Technical Specialists can answer your questions about specific food items and help you plan for better wrapping at lower cost with Olefane.

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ply inventory, thus avoiding any shortage or waste.

Under our own company procedure, where we freeze the small unit packages in a sharp, direct expansion ammonia, blast freezer, it is imperative that each department knows the plans of the other. Our unit packages are usually filled and weighed, after which they are immediately inserted in pans which hold 24 1-lb. units or 16 1½-lb. units, depending on the species of fish that is being processed and packed. (See Fig. 1.)

From here they go to the sharp freezer, and early the following morning these unit packages of frozen fish are removed from the pans and transferred to the various shipping containers.

This particular operation is referred to in our industry as "mastering." The master containers are transferred to the holding rooms maintained at a temperature that does not fluctuate from 0 deg. F.

Notification System

To cope with this tremendous problem of packaging supply inventory control, that can be costly and wasteful if not properly done, a system has been devised that eliminates many of the headaches. Department heads must notify the purchasing agent when they need supplies.

For this particular job they fill out a *purchase requisition* (see Fig. 2) that, in addition to asking for supplies, contains other information valuable to the main office. The requisition tells how much to order, the date of the order, number of units on hand, and the date on which the supply will be exhausted.

The purchasing agent has routine arrangements with many suppliers to maintain a specified inventory in their plants, subject to his shipping instructions. This arrangement has been made possible by a sense of cooperation based on acquainting the various suppliers with the available storage space within our plant which their various items could occupy. When a supplier is

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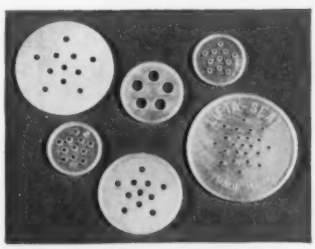

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At West Virginia Pulp and Paper Company's Torrance, California Multiwall Bag plant, top machine running speeds are possible with instant-setting THERMOGRIP hot melt adhesives.

THERMOGRIP® ADHESIVES

Provide Better Method for Bag Sealing

Permit 20-39% faster production
Low cost — no waste

Multiwall bag makers are offering bag ends sealed against moisture and sifting with tapes applied by hot melt adhesive. And bag users can duplicate these stronger, more reliable closures on the open ends at their bag filling operation with clean running THERMOGRIP adhesives.

This is just one of the tape applying jobs that can be done with THERMOGRIP cord-like adhesives and interesting new application techniques. Clean, economical and easy to use, they can replace liquid adhesives, activated or pressure sensitive tapes. Where hard to bond or impervious surfaces are a problem, THERMOGRIP adhesives can provide greater reliability and reduced waste. If you have a tape applying problem in widths from 1/8 inch to 3 inches, find out how plain tapes plus hot melt adhesives can serve you better. Write or 'phone today.

In wet or dry weather and through handling and shipping, bag ends taped with THERMOGRIP adhesives protect contents from moisture and sifting. Perhaps you, too, can cut losses with THERMOGRIP Adhesives.

United

UNITED SHOE MACHINERY CORPORATION
140 Federal Street, Boston, Massachusetts
Liberty 2-9100

notified, it knows approximately how many units it can ship to us from our inventory that it is holding at its plant.

Handling Purchase Order

Upon receipt of a request for particular supplies, the purchasing agent will make out a *purchase order,* copies of which contain information important to department heads. The purchase order will instruct the interested department head as to how many units are ordered, date when they will arrive, and the date on which the order was placed.

Department heads have no authority to receive a truckload of shipping supplies unless they are in possession of the copy of the purchase order for its contents. If there should be a difference between the original order and the final tally, the correction must be made on the copy.

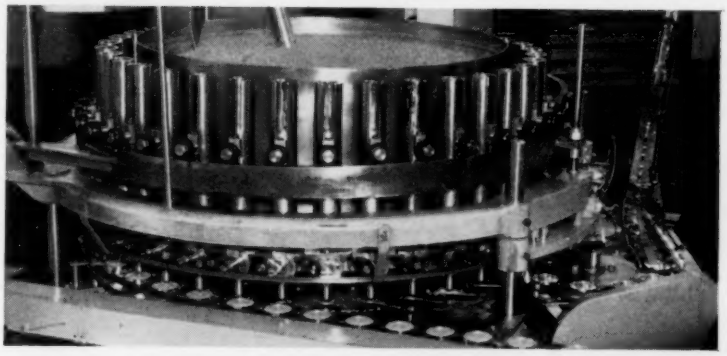
Daily Stock Record

At the conclusion of each month a physical inventory must be taken and the figures (see Fig. 3) turned in to the purchasing agent. The elimination of error and waste is achieved by the use of the *daily stock sheet,* which is made out by the department heads at the end of each day's production.

This sheet (see Fig. 4) contains a statement of the amount of all materials used, materials shipped to competitors, and all materials received. This report enables the office force to keep an accurate accounting of supplies and eliminates any possible difference in the figures at the end of each month when the physical inventory is made.

Company policy is to try to maintain a 4-day supply of all packaging materials used within our plant, based on the assumption that operation may be at capacity on any single variety of fish. By the use of this "cushion" it has been comparatively simple to handle the unpredictable variations in the supply of raw materials, and even help a short-handed competitor without hardship to ourselves. *(End)*

FLUIDICS* AT WORK



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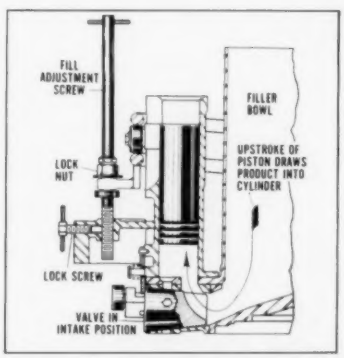
Take a look at the *total* design approach in a Pfaudler® rotary piston filler and you'll see how *every* factor can contribute to profits.

Start with the piston. Here you have the proper combination of smooth fit and small "cushion" so you can handle



products ranging from light, to heavy viscous fluids.

Accuracy is ±1/10 fluid ounce for most products. There's no surging, no splashing, no piston leakage.

Next check the *fill adjustment mechanism.* With a Pfaudler filler you can adjust fill accuracy from a single control point without dismantling or even stopping the filler.

Cleaning is simple and rapid. One man can do it thoroughly in one-half hour. He can do it without tools or hoists by removing only two parts per station,

the piston and valve. There are no gaskets to clean and refit, no adjustments to make after cleaning.

Lubrication is well provided for, since all grease fittings are tied in to very accessible headers. And all gears are submerged in oil.

Repairs are kept to a minimum, since there are only four primary wearing parts—piston and valve rollers, valve trip cam, and valve-lock wear pad. You will find that all are modestly priced, easy to stock and replace.

Over-all weight, and how it is supported, also should be considered. The sturdy base and over-all ruggedness are a hallmark of every Pfaudler filler.

Name the product, rate and container and you'll find a Pfaudler filler to handle it profitably. Choose from machines with 6 to 36 stations, to handle glass, paper, prepack or tin.

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Part IV—User plant storage, handling, and scrap control techniques

Practical pointers to better folding carton performance

Even the best made cartons will not perform effectively unless they get proper transportation, storage, conditioning, and handling at the user plant. This assumes adequate packing and shipping methods, but also it assumes correct use-out or unpackaging prior to production line use of cartons.

Further, careful examination of incoming cartons may give clues suggesting unsatisfactory performance on the packaging lines. An alert plant operating group can anticipate and avoid much downtime by scrutinizing cartons prior to use. However, inspection does not always give good results.

Inspection May Not Help

For example, it may be impossible to tell by visual examination whether cartons will perform correctly. Some which appear to be all right may actually be bent or warped just enough so that they fail to form and glue properly. Because appearances can be deceptive, some users are looking to other means as a source of predicting carton performance on packaging lines. These include tighter specifications and better quality control by statistical methods.

Suggesting that the hazards of transportation expose cartons to various kinds of damage, some users advise greater study of impacts. They point to the value of impact recorders as a means of finding out where, and under what conditions, damage occurs—all with a view to reducing in particular the imperceptible damage that may go undetected until a plant starts running the cartons through its machinery.

Control Transport, Handling

Another key to better carton performance is closer control of packaging and loading conditions, as well as transportation between carton maker and package user. Carton producers do not always use adequate packing for cartons. Sometimes the cartons encounter rougher handling than normal packing techniques anticipate.

Package users have to be very careful about cartons received in bundles or unitized loads secured with steel strapping. Before letting cartons run through packaging lines, it is important to be sure that strapping has not cut cartons, or that excessive loads of cartons on pallets have not extended the cartons beyond pallet edges. In other words, trying to jam too many carton bundles onto a pallet load may mean damaged cartons.

Sometimes a plant can cut its down-time on cartoning lines simply by making sure its suppliers use sufficient packing. For example, it may help to use double-wall corrugated board for boxes or in between loads or units, as in freight cars or motor trucks. Such board (or even plywood) may help cut carton defectiveness when placed between carton loads and the open shoring of cars.

How Are Your Cartons Stored?

But, for sake of discussion, assuming that transportation of cartons takes place under reasonably controlled conditions and with adequate packing, next attention turns to storage of cartons at user plants. This is especially important under conditions where reasonably large inventories are maintained. Also it deserves attention at plants where carton buying and delivery is on more of a hand-to-mouth basis.

Economic considerations as well as practical requirements usually influence carton ordering. The savings inherent in large orders may offset the troubles likely to occur because of having to run cartons not kept in proper storage.

Many production specialists point to the growing importance of preconditioning cartons prior to running them on lines, as well as proper storage. More and more plants are providing storage with controlled temperature and humidity, although the urgency or advisability of such conditioning varies with climatic conditions around the country.

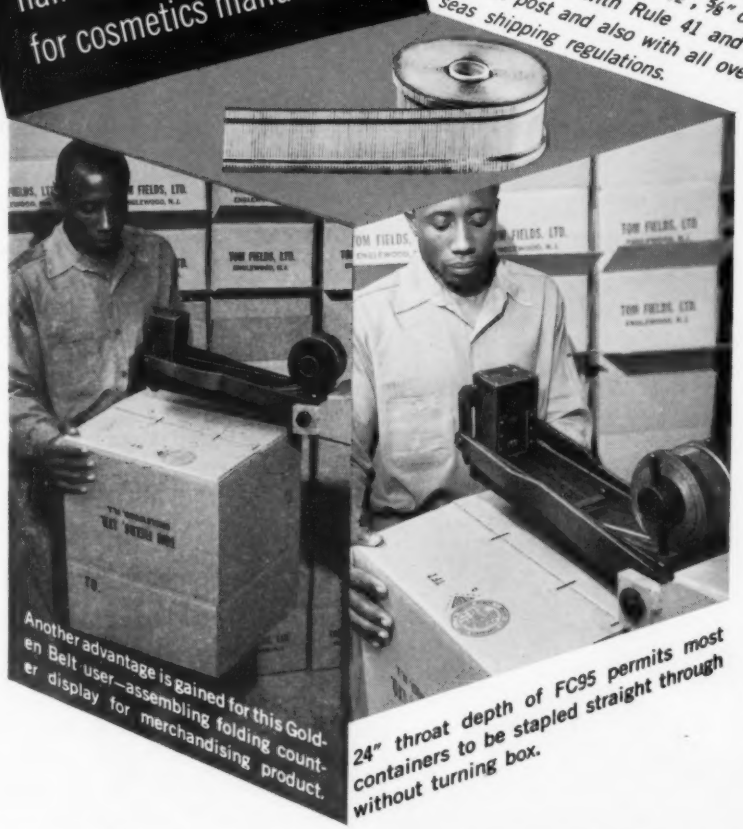
Temperature, Humidity Vital

In simplest terms, temperature and humidity control contribute to packaging line efficiency. For example, carton blanks stored under cold conditions may curl when brought to warmer areas—and cause jamming of cartons on packaging lines. Or, material too hot or too dry may drag on the machinery, thus necessitating lower running speeds. *(Turn next page)*

BOSTITCH GOLDEN BELT

Cuts box assembly time in half. Saves 0.4 cents a unit for cosmetics manufacturer

Golden Belt staples have 1¼" crown width, leg lengths of ½", ⅝" or ¾", and comply with Rule 41 and all parcel post and also with all overseas shipping regulations.



Another advantage is gained for this Golden Belt user—assembling folding counter display for merchandising product.

24" throat depth of FC95 permits most containers to be stapled straight through without turning box.

A cosmetics manufacturer found a way to speed package assembly and lower costs when he learned about this fast new method for box bottoming.

The belt on top of the Bostitch Golden Belt Box Bottomer consists of 4000 continuously fed copper-finished, wide-crown staples. This permits bottoming 1000 to 2000 boxes without reloading. The cosmetics manufacturer, mentioned above, fastens most of 28 different sizes of containers with just two staples. Larger sizes require four staples. The entire length of most boxes can be stapled in one straight pass through the machine.

Your packaging and shipping room may provide opportunities where the Bostitch Golden Belt can increase speed and efficiency and lower costs of box bottoming. Have a Bostitch Economy Man show you how a surprisingly low investment will result in more boxes an hour. Find him in your phone book, or drop a line to Bostitch, 866 Briggs Drive, East Greenwich, Rhode Island.

Fasten it better and faster with

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866 Briggs Drive, East Greenwich, Rhode Island

Some users assert that cartons which are to be glued or otherwise closed on automatic (or even semi-automatic) equipment need pre-conditioning at temperatures and humidities conducive to production line efficiency. Cartons not properly pre-conditioned may hang up on forming equipment, thus requiring lower filling and closing speeds. Adequate conditioning is necessary if you want sustained high-speed operation.

A primary requirement for many a carton is its adaptability to forming machinery. This demands that it set up well and not drag. It must have gluing qualities so that it closes tightly in the course of an automatic operation. This makes it important that cartons are not warped, curled or otherwise distorted. Otherwise, poor forming and jamming, or at least slowing down, are usually inevitable.

Reducing Scrap

Another way of looking at the inplant handling and use problem is from the viewpoint of scrap reduction. Aside from the great losses from downtime, there also is the matter of cartons spoiled or otherwise rendered unusable. Obviously, much scrapping of cartons traces to poor fabrication and incorrect practices at the carton plant. These, however, are problems for external solution—in contracts and agreements with suppliers—in contrast to strictly packaging line problems.

There is much opportunity for scrap control at the user plant. Whether a plant tries to maintain a 1 per cent scrap limit, or any other such figure, a user must watch its own handling practices as well as those of the suppliers on whom it imposes this limit. And sometimes the product itself or the conditions on the packaging line can contribute to carton loss.

Watch Filling Temperature

For example, the temperature at the point of filling a carton can be critical. It is important for a user to be sure that the carton manufacturer knows about filling line conditions so that cartons can be made to match them. Whether a pre-glued carton is hot- or cold-packed can be important. If the glue is not heat-resistant, the temperature of a hot (or just warm) product can cause trouble on the packaging line or package failure at some later time.

Above all, the package user must keep in mind the special problems inherent in a cellulosic product—chiefly, its vulnerability to changes. For example, suppose cartons made according to specification will not perform on automatic packaging machinery that is correctly functioning. More often than not the package user sends for a representative of the carton manufacturer, urging him to rush to the user plant.

Changes May Occur

But during the interval between the occurrence of the trouble and the arrival of the carton production specialist, there are changes. By this time the cartons have cured or

Regardless of your gluing needs . . . spotting, rolling, striping, doweling, etc. . . . you can incorporate new Internal Valve FF Glue Guns in your automatic machines . . . existing or new! Over 400 sizes, models to choose from . . . with each unit designed for fast, clean gluing without waste. Easy installation. Guaranteed. Send for your catalog on this marvelous way of "Controlled Gluing". Oh yes . . . FF Guns can be used manually . . .

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Food in flexible packaging, by John J. Birdsall

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PACKAGE engineering
185 North Wabash Avenue, Chicago 1, Illinois

matured, so to speak, and have lost or taken on moisture. As a result, when the user's plant production people start to show the carton maker's trouble-shooter that the cartons will not run, it turns out that they run well.

Some users and suppliers alike say that the basic fault is the lack of suitable tests for immediate production control. They point out that existing tests are the "referee" type, and usually depend on 24-hr. storage. As a result, they merely determine whether or not certain conditions once existed and are of no help in showing a production line supervisor or crew how to correct that same trouble at the time it is occurring.

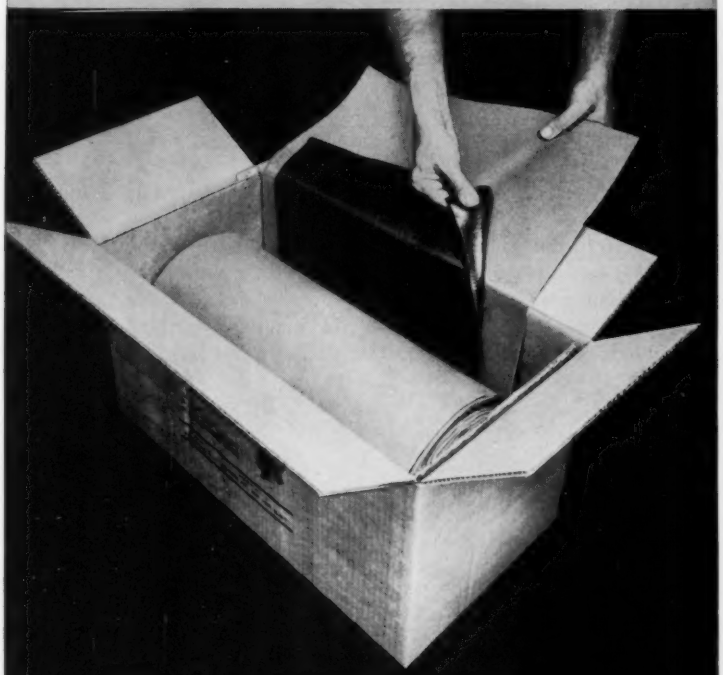
Have Stable Conditions

In the absence of suitable instrumentation or methods for immediate determination of off-standard conditions, the big point is that the user often can compensate for this lack by providing a stability of production conditions. This may mean nothing more than spotting loads of cartons near the packaging machinery a certain number of hours in advance of use, so that cartons can adjust to the temperature and humidity of the packaging line area.

As the next article of this series will show, developing proper specifications can be an important aid to making cartons run well on production lines. For example, a scrap limit, as suggested above, may be advisable. Even a 1 per cent scrap limit, regarded frequently by users and suppliers as reasonable, can be troublesome at high speeds. When machinery is running 300 cartons/min., this 1 per cent scrap limit can mean stopping the line three times a minute to clear a jam due to a defective carton.

(Next article of this series will discuss the details of coordinating and combining a year's myriad requirements into articulate and workable carton specifications. It will be followed by a discussion of helpful hints mutually beneficial to user-supplier relations.)

2 useful services...



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2. Patapar is stripped from calendered rubber earmarked for company use, cut up, and re-used as interleaving sheets during early processing of rubber for this firm's own products. It can be used this way because it retains its protective and releasing properties.

Perhaps Patapar Releasing Parchment can make *your* production process more efficient. Send for free sample and information kit.

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For more information circle No. 268 on Reader Service Card, Page 119

Organize: management of packaging

(Continued from Page 50)

sition. Under these conditions, he comes under the jurisdiction of the works manager or his equivalent. Depending upon the packaging executive's responsibilities, his company, etc., he may report directly to the works manager, to the general superintendent, to the plant services manager, to the traffic manager, or to some other person in the manufacturing department or division.

Large companies or companies with multiple plants may have several individuals directing their packaging. These may be identified as packaging foremen, packaging supervisors, etc. Most packaging supervisors are line men. They are the ones who are responsible for making sure the products are packaged properly and ready for shipment when needed.

Because of this very important responsibility, these line packaging men frequently do not have time to devote to packaging activities that support the line effort, such as cost reduction projects, the development of new packaging methods, the investigation of new materials, the preparation of purchase specifications for the packaging materials, etc. If these line men had the time, many of them could, no doubt, give an excellent account of themselves in the performance of these other packaging activities.

Staff Packaging Executives

In recent years, many companies have appointed packaging coordinators, packaging engineers, and other packaging executives to staff positions. These men are relieved of the responsibility of supervising the line packaging operations and can devote their full time to staff packaging activities, such as those suggested for the packaging coordinator earlier in this article.

Depending upon many of the factors previously enumerated, staff packaging executives may report to the executive vice president, to the general manager, to the director of manufacturing, to the head of the industrial engineering or engineering department, or some other person in an executive position.

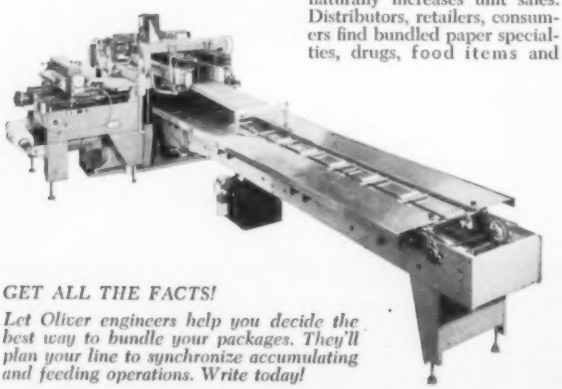
After one has obtained and analyzed the information described in this article, as it pertains to the situation within a given company, there is generally no problem in deciding whether a packaging executive should be in a line or staff position. For example, the packaging coordinator mentioned earlier would, almost of necessity, have to be a staff position.

Packaging Coordinator

The exact position of the packaging coordinator in the organizational structure, though, may present more of a problem. If the packaging is especially important to the success of a company's operations, the packaging executives

(Continued on Page 126)

Step up sales,
cut labor costs...
bundle your packages
on the OLIVER



Overwrapping groups of packages into attractive bundles naturally increases unit sales. Distributors, retailers, consumers find bundled paper specialties, drugs, food items and similar articles easy to stock and handle.

The recognized quick-adjustability of Oliver wrapping machines makes them ideal for bundling. You can use almost any heat-sealing material: polyethylene, Vitafilm, cellophane, or other soft, plastic films. Choose endfold or underfold, overall or line bottom and end seals. Change for bundle size in a jiffy. The Oliver can also zip-tape the bundle. Even on short runs down-time is low. And the exceptional range of sizes handled by the Oliver is another money-saving advantage.

Everybody goes for the new bundle of Pocket-Pack Kleenex containing eight units. The bundles please both eye and touch. They are neat and strong. For overwrapping a bundle of multiple units the Oliver wraps to sell and save!

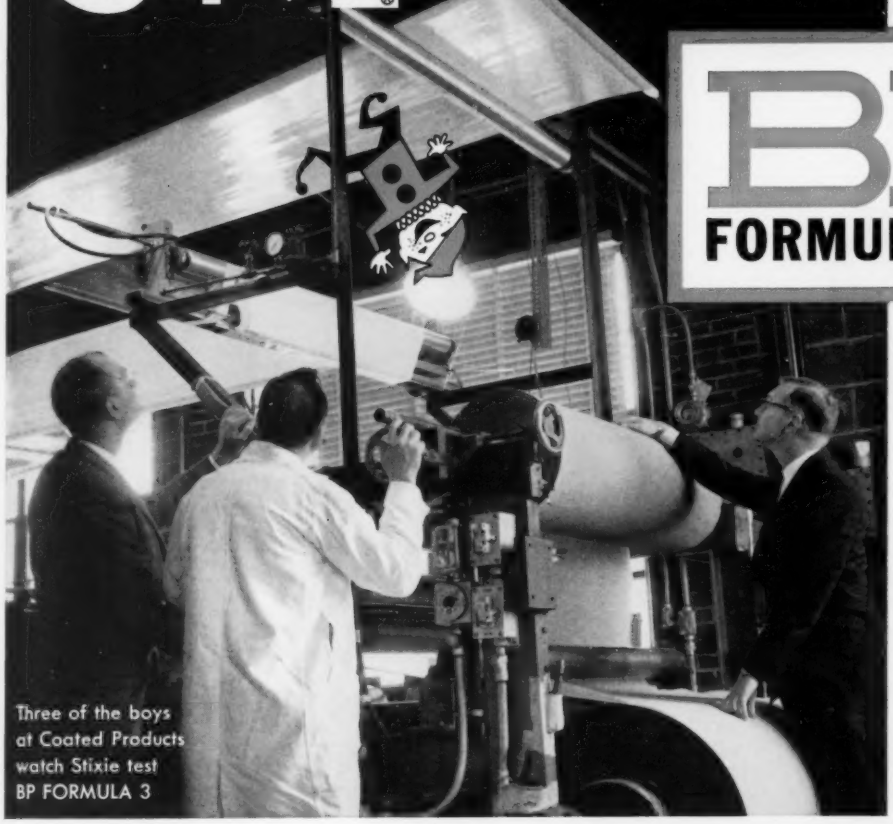
GET ALL THE FACTS!

Let Oliver engineers help you decide the best way to bundle your packages. They'll plan your line to synchronize accumulating and feeding operations. Write today!

OLIVER
MACHINERY COMPANY
PACKAGING DIVISION
Grand Rapids 2, Michigan

"STIXIE" has a new one

BP FORMULA 3



Three of the boys at Coated Products watch Stixie test BP FORMULA 3

BP FORMULA 3 *is guaranteed to be the best tamperproof pressure sensitive adhesive on the market!*

This newest concept in adhesives is best because:

* It has the high hold properties of a laminating adhesive with the quick-stick values of a soft, gummy adhesive
* It has excellent cold flow characteristics
* It makes regular label stock tamperproof
* It has a tack holding value of 7 pounds per square inch
* Its release papers are easily removed
* Its printing, die-cutting and stripping properties are excellent

Only STIXIE'S BP FORMULA 3 can give you the complete answer to all your tamperproof label stock problems.
And, remember, BP FORMULA 3 is *fully guaranteed* by STIXIE.

STIXIE
pressure sensitive products

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IMPACT-O-GRAPH KNOWS...
IMPACT-O-GRAPH SHOWS...

The Time and Severity of "In Transit" BLOWS!

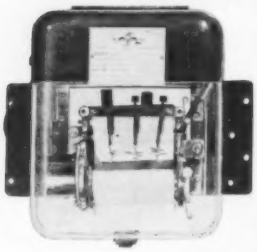
Literally millions of dollars are wasted each year in needless damage to goods in shipment. And most of this damage comes from unknown causes.

IMPACT-O-GRAPH'S job is to track down the cause of damage and supply the information to change packaging or shipping methods if necessary. IMPACT-O-GRAPH is also widely used to test the ability of products to stand up under the shocks or impacts encountered in their use.

Many models are available with a wide choice of "g" ratings for use either in a package with a product or attached to the carrier.

Send today for the new brochure giving the specifications on different IMPACT-O-GRAPH models...their operation and uses.

The IMPACT-O-GRAPH is National Safe Transit approved. Leasing arrangements are available.



Model Hc and Hm

THE IMPACT-O-GRAPH® CORPORATION

1900 EUCLID AVENUE • CLEVELAND 15, OHIO • CHerry 1-5838

Circle No. 271 on Card, Page 119

fill gallons at...

1800 PER HOUR WITH THE GEYER G-59 FILLER

If you fill liquids, semi-liquids or semi-solids into gallon containers, this Geyer Piston Filler will save you money because of its remarkable speed, accurate "bottom-up" fill to prevent air pockets and "No Jar—No Fill" feature which eliminates waste.

Other benefits are:

- One stroke filling of gallons, half gallons or quarts.
- Product-contact parts of 18-8 Stainless Steel and Copper-free Alloy.
- Meets Board of Health requirements.
- Contact parts easily disassembled for cleaning in minutes *without tools.*

Optional equipment:

automatic in-feed or discharge conveyors; vertical or horizontal agitators; and air cleaner.

WRITE, WIRE OR PHONE to find out how this unit can save you money.

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the original builder of Philadelphia piston fillers

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Exceptional printing makes the difference...

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- Printed or decorated up to 4 colors on crystal clear, transparent or opaque colors
- Largest line of RIGID plastic containers
- 1/5 the weight of glass—greatly reducing ever-increasing shipping and handling costs
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- Also made of new high density polyethylene—Poly-Opal*. Are chemically inert, stain resistant and have lower permeability to moisture and gases than conventional polyethylene.

*T. M.

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PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

Circle No. 272 on Card, Page 119

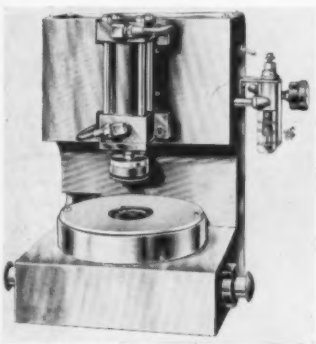
Circle No. 273 on Card, Page 119

ANNOUNCEMENTS OF MACHINERY AND PRODUCTS

● Beneath each announcement is a code number. As you select items on which you want more information, *note* this number. ● Now, *circle* the corresponding numbers on the postcard, Page 119. ● Next, *fill* in your name and address. ● Then, *mail* the card—we pay the postage.

● Container Sealing Unit

Ekco-Alcoa Containers, Inc. has introduced a semi-automatic unit, Model S-1, to hermetically seal a variety



of aluminum foil container sizes. It is designed to heat seal an aluminum foil cover to the company's line of containers. This table unit may be placed to serve several production lines, Ekco-Alcoa says. The operator places a filled container in position, locates the cover, and then actuates double interlocking safety switches to complete the hermetic seal. The finished package is automatically positioned for removal. Interchangeable sealing heads are available to accommodate a container size range up to 5 in. with a maximum height of 1¾ in. Operating speed is 750 containers/hr. with two operators.

Circle No. 1

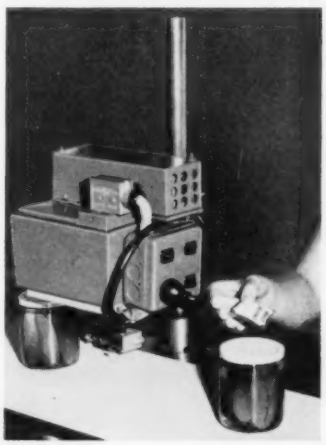
● Heat-Sealable Parchment

Paterson Parchment Paper Co. has brought out a new type of heat-seal Parchkin Motif Art parchment for decorative heat-seal packaging. The new material is designed to function on all types of automatic and semi-automatic heat-seal packaging machinery and can be used for pouches, blister packages, and overwraps, according to Paterson. The material can be sealed face-to-face or face-to-back, but does not seal to other materials. It has a basis weight of 33 lb. Rigidity is a special characteristic of the material, resulting in pouches and blister packs that are relatively stiff and springy, giving a decorative appearance while protecting the contents within, the manufacturer says.

Circle No. 2

● Outsert Sealer

Outserts Inc., a div. of Eureka Specialty Printing Co. has developed a new automatic wax dropper, Model



IV, for application of outsert folders to packages. It is designed for automatic delivery of hot adhesive wax and the unit may be used on production lines operating at speeds up to 60 units/min. To accommodate various sizes of containers, the mechanism is adjusted to different positions by thumb screws. As a package passes under it on a conveyor, it trips a Micro Switch which automatically releases the proper amount of adhesive wax.

Circle No. 3

● Polypropylene Film

The Kordite Co., a div. of National Distillers and Chemical Corp., announces a new heat-sealing, oriented polypropylene packaging film, Kordite 1500. This film operates well on most existing automatic packaging machines, the company says. It is now being produced semi-commercially in ½-mil thickness. The new film has a tensile strength of 20,000 to 40,000 lb./sq. in. Kordite says, noting that through biaxial-orientation, this thermoplastic film has a modulus of elasticity 7 to 10 times that of polyethylene and 2 to 4 times that of unoriented polyproplene. The film, with its heat-seal coating, is grease-proof, the producer says.

Circle No. 4

● Case Former, Sealer

Industrial Assistance Co. announces the development of a 7-station unit designed to handle a modified 5-

panel folder such as used to package large pieces of material. Operators position units of the product being packaged on arms holding the folder which has been manually broken on one score line. With the panels in position, a trip is released and the folder passes through a gluing station. The glued long flap is folded beneath the folder and sealed at a vertical compression unit. Glue is then automatically applied to the end flaps and a second vertical compression unit tucks these flaps under and seals them and the completed package is automatically discharged.

Circle No. 5

● Extensible Paper

Hollingsworth & Whitney Div. of Scott Paper Co. has demonstrated its new Expanda-Kraft extensible kraft paper. It was designed to balance the need for stretchability and toughness to prevent bag breakage and the need for optimum rigidity, flexibility, uni-

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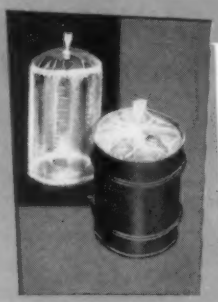
DOUBLE-SEALS

DRUM LINERS ★ BAGS ★ CARTON LINERS

ALL STYLES • ALL SIZES

Produced with fine materials:
POLYETHYLENE, POLYPROPYLENE, VINYL, LAMINATES
The largest manufacturer in the U.S.A.
concentrating on ROUND bottom and
STRAIGHT bottom LINERS . . . the FINEST!



NEW! DOUBLE WELD SEAL
DRUM LINERS

BAGS

CARTON LINERS

*Double-Seal Guaranteed Safety...

SUCCESS!

LOW, LOW, PRICES!

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straight bottom liners

*"DOUBLE WELD" POWER SEAL
round bottom liners

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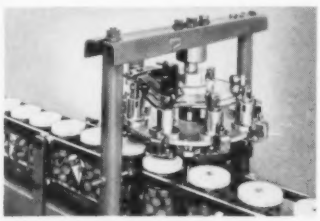
formity, printability, and moisture resistance, according to the producer. It is being produced with approximately one and one-half times more cross-direction and five times more machine-direction stretch than ordinary kraft. The paper is available in bleached white, semi-bleached, and natural kraft and is made in 50-lb. and other basic weights.

Circle No. 6

● Automatic Price Marker

Adolph Gottscho, Inc. has developed a new machine for high-speed, volume price marking of cans, jars, or bottles.

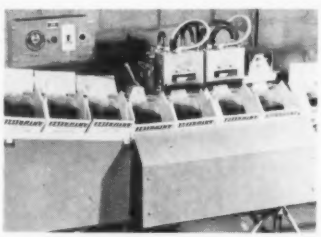


The machine may be placed into a conveyor line at any convenient point, is self-powered, fully automatic, and requires no attention during operation, Gottscho says. It marks prices on up to 1000 units/min. and works on surfaces recessed as much as ⅝ in. It accommodates changeable rubber type.

Circle No. 7

● Container Heat Sealer

Hedwin Corp. announces a new heat sealer, its HS-7 Automatic, capable of sealing up to 10,000 Cubitainers/8-hr. day. This unit is designed to



eliminate all hand operations. According to Hedwin, 3500 5-gal., 5000 1-gal., or 10,000 1-qt. cubes can be sealed in a single shift. The sealer is designed for straight line operation and normally is used in tandem with filling equipment. When integrated with its FM-3 filler, a combined filling-sealing operation results which requires only one operator for container feed, Hedwin says.

Circle No. 8

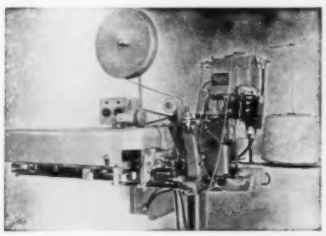
● High-Clarity Polyethylene

Monsanto Chemical Co.'s plastics div. is producing a new polyethylene high-clarity packaging film resin. According to the company, improved processing characteristics increase film extrusion rates by as much as 10 to 25 per cent. It is available in two formulations: medium-slip, MPE-31 and high-slip, MPE-32. The new film resin has a melt index of 3.0 and the resins for both formulations have similar characteristics.

Circle No. 9

● Bag Closing Machine

Bemis Bro. Bag Co. is producing a new bag closing machine designed to apply a thermoplastic tape closure



over stitching on open-mouth multiwall shipping sacks. The closure creates a moisture barrier to prevent caking of hygroscopic products and retains its physical and chemical characteristics over a wide range of temperatures, Bemis says. Automatic elements which have been incorporated into the machine include starting, thread cutting, and tape application and cutting components. Once the filled bag enters the sewing guide, no further operator assistance is required, according to the manufacturer.

Circle No. 10

● Ultrasonic Bonding Unit

International Ultrasonics, Inc. have developed a new method of joining polyester film, tape, and sheet which requires no joint preparation, external heat, nor adhesives. Joining is accomplished by high-frequency mechanical vibration which apparently creates heat at the joint interface to form a bond. Since heat is created only at the interface, there are no adverse heat affects on the material, the developer says. Ultrasonic vibration is produced by a vibrating head in contact with the joint, driven by a transistorized self-tuning power supply and ultrasonic generator unit. The equipment has been used with polyester material up to 6 mil thick.

Circle No. 11

● Pressure-Sensitive Blister

The Jackmeyer Corp. has introduced a new hand-applied, pressure-sensitive Stik-on Blister Pack. The package is said to have a shelf life of over two years and during that period will be practically pilfer-proof. Just light hand pressure is required to bond them.

Circle No. 12

(*Turn page*)

OUT-DATED MARKING METHODS

YOUR WORST COMPETITOR

Old-fashioned devices cost more than just the price of pencils, pens, rubber stamps or obsolete equipment. They cost hours of someone's time and then give you smudgy, hard-to-read information at best. When you're geared to today's production standards with Soabar automatic marking equipment you . . .

- Have in-plant marking that's split-second and accurate.
- Avoid unnecessary inventory of pre-printed tags and labels.
- Eliminate waste of unusable or out-dated tags and labels.
- Imprint neat, legible labels that help make merchandise fresh and salable.

Without obligation, let us show you how push-button, easy-to-operate Soabar machines can cut your marking costs.

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A message to

Package research and development departments
Engineering departments
Technical and research libraries
Everyone concerned with what is being written in the world of packages

We recently were appointed American agents for *Packaging Abstracts*, published by the British research association PATRA—The Printing, Packaging & Allied Trades Research Association. This service gives you, in a single, handy periodical (published monthly, plus an annual index), brief summaries of packaging articles that have appeared in some 200 packaging magazines plus over 150 magazines devoted to printing and allied subjects, and numerous patents, books, pamphlets, and technical data provided by makers of machinery and materials.

This publication is unlike any other abstracting service in the world. It covers technical and operational packaging; it abstracts not only English language periodicals, but translates and abstracts foreign language publications from Germany, Russia, France, and every country in the world that publishes periodicals concerned in whole, or in part, with the various phases of packaging.

At present, each issue is divided into 18 main sections, including among others such subjects as packaging materials, adhesives, labels, coatings, and packaging machinery.

How To Use *Packaging Abstracts*

Suppose you are interested in finding out what has been written on cushioning. You would refer to the section on cushioning. A recent issue abstracted seven articles on the subject, that had appeared in one American magazine, two British, one Canadian, and two U.S. military reports. Perhaps the abstract would give you the information you want; if not, you could request a complete reprint or copy of the original publication. The same issue, for instance, abstracted 13 articles on plastic containers. An average issue carries about 400 abstracts based on literature received from all parts of the world.

The Cost Is Nominal

It costs thousands of dollars to collect, translate where necessary, evaluate, and abstract pertinent articles. Each month, literally thousands of pages of editorial material are read and the final result put into a handy 5½ x 8½-in. booklet averaging around 75 pages a month, plus the annual index. You can receive the 12 monthly issues plus the annual index for a total annual subscription price of only $42.00.

Examine It 10 Days Free

Just mail the sample subscription form shown and we will mail you a sample copy of the current issue. You may return it in 10 days and you owe us nothing. If you keep it, we will mail you subsequent issues as they come off the press, and bill you $42.00 for a one-year subscription.

Free Examination Form

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Gentlemen:

Please send me a copy of *Packaging Abstracts* for 10 days' free examination. I understand that I may return the copy in 10 days and I owe you nothing. If I do not return it, you may bill me $42.00 for a year's subscription.

Name _____ Title _____

Company _____

Street Address _____

City _____ Zone ____ State _____

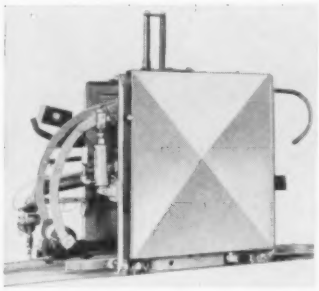
● Planished Seam Steel Pails

Bennett Industries, Inc. announces the availability of a new type of lined steel pail that features planished side seams. Unlike most conventional pails, a planished side seam gives a continuous, flat, smooth surface throughout the interior of the body, according to the manufacturer. Planishing flattens and smooths the welded side seam so that the interior of the container body is a continuous tube.

Circle No. 13

● Box Flap Closer

The Lathrop Paulson Co. reports the development of a new machine that automatically closes the flaps of boxes



(without sealing them) and turns them over as they pass along a conveyor. It is designed to handle any size box from 8 x 8 x 3½ in. up to 24 x 18 x 16 in. and any box weight from 3 to 60 lb. at speeds up to 10 boxes/min. It operates electrically and on compressed air. Its producer designed it primarily to close and secure boxes that must be left unsealed.

Circle No. 14

● Automatic Capper

Lily-Tulip Cup Corp. tells of its new Roll-On, a compact capper which simulates the rolling action and sealing advantages of hand capping while maintaining the speed of automatic equipment. Designed to be used on an Anderson filler, this capper produces a capped package with either paper or plastic lids and plastic or combination paper and plastic packages. It occupies no floor space since it can be mounted directly onto the filler.

Circle No. 15

● Shrinkable Overwrap

E. I. Du Pont de Nemours & Co. Inc. has introduced a new shrinkable overwrap of polyethylene for use as a can multi-pack. Shrunk around two or more containers, similar or dissimilar, and holding them tightly as a single unit, it provides transparency, speedier and easier handling, and savings based on reduced cost of packaging materials and printing economies, Du Pont says. The wrapping itself is performed by a standard polyethylene overwrap machine, with slight modifications, after which the package is conveyed through the shrink tunnel where the film shrinks from 10 to 20 per cent.

Circle No. 16

● Closure For Injectables

Aluminum Co. of America is now producing its Push-Button Stericap, a new aluminum closure for injectables.

This cap combines instant-opening with complete product protection, Al-

WOW!

More and Better Cartons at Less Cost

We were in a real bind. More jobs coming in — on tougher stocks and finishes. Our glues didn't permit top production and gave less than 100% results. Customers and management complained. Then I called Findley. The resin folding box glue they recommended handles jobs we used to need a couple of glues to do; plus jobs we couldn't do before. Does them better and faster. And at a profit. Customers are satisfied. Management is happy. I'm a hero.

YOU CAN BE A HERO . . . with

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Carton 40-60 Units Per Minute—with just one operator—at LOW MACHINE COST

Just one compact, efficient machine—with just one operator—will handle almost any product you package in reverse tuck folding cartons, at the rate of 10,000, 15,000, 18,000 packages per day. Yet, installed and turning out steady production, costs less than $5000!

REDINGTON automax® CYCLE CARTONER

feeds and forms cartons, places them in conveyor pockets. One operator places the item to be cartoned in each of the three loading troughs, then pushes slide forward and back. AUTOMAX tucks in end flaps, discharges finished packages, restarts the cycle—*all automatically!*

Solidly built for long, trouble-free service, AUTOMAX is just 70" long, 30" wide, weighs only 750 lbs. It's caster-mounted—move it anywhere in the plant you need it, even where floor space is limited. Perfect for tubes, bottles, toys, parts, hardware—whatever you carton. *Adjustable.*

★ *Write for illustrated folder giving full details about AUTOMAX—priced to fit your budget.*

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Labeling Lines

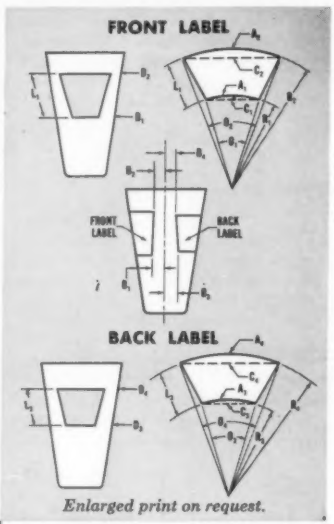
by George L. N. Meyer, Jr.

DETERMINING THE SIZE AND SHAPE OF A FRONT *AND* BACK BODY LABEL

As we have noted in previous articles, the actual design of a label can have a marked effect on your ability to apply it at production speed. In fact, the designer can make labeling a pleasure or a nightmare . . . depending upon his knowledge of labeling machinery.

We strongly advise the use of a mathematical approach, and recent Labeling Lines have discussed methods for determining wrap around neck labels and labels for tapered tumblers. Now, lets talk about establishing a standard for a *tapered container which requires both a front and back body label.*

Please bear in mind that these calculations also apply to a straight sided container or an inverted tapered container. In other words, here is a proven method for attaining effective label design *any time* front and back labels are involved.



Enlarged print on request.

FRONT LABEL CALCULATION

• Determine the height of both the front and back labels, "L", and also their location above the bottom of the tumbler. Accurately measure the glass diameters, D_1 and D_2 at the bottom and top of each label. These diameters can also be calculated from the glass drawing.

• Determine the distance "B" required between the front and back label.

• Determine the amount of wrap in inches, A_2 required for the *top* of the front label.

$$R_1 = \frac{D_1}{D_2 - D_1} \times L_1 \qquad R_2 = R_1 + L_1$$

$$A_1 = \frac{D_1}{D_2}(A_2 + 2B_2) - 2B_1$$

NOTE: If back label is to be exactly the same as the front label:

$$A_2 = \frac{\pi D_2}{2} - B_2 \qquad A_1 = \frac{\pi D_1}{2} - B_1$$

$$\theta_1 = \frac{A_1}{2\pi R_1} \times 360 \qquad \theta_2 = \frac{A_2}{2\pi R_2} \times 360$$

$$C_1 = 2R_1 \sin \tfrac{1}{2}\theta_1 \qquad C_2 = 2R_2 \sin \tfrac{1}{2}\theta_2$$

BACK LABEL CALCULATION

1. If the back label is the same height, "L", and is located the same distance above the bottom of the container, use the same values for L, D_1, D_2, R_1 and R_2 as was used in the front label calculation.

$$A_4 = \pi D_2 - (A_2 + 2B_2 + 2B_4)$$

$$A_3 = \pi D_1 - (A_1 + 2B_1 + 2B_3)$$

$$\theta_3 = \frac{A_3}{2\pi R_1} \times 360 \qquad \theta_4 = \frac{A_4}{2\pi R_2} \times 360$$

$$C_3 = 2R_1 \sin \tfrac{1}{2}\theta_3 \qquad C_4 = 2R_2 \sin \tfrac{1}{2}\theta_4$$

NOTE: All calculations should be carried out to 5 places.

2. If back label is to be of a different height, "L", and a different distance from the bottom of the container, then:

• Determine the height of the label, "L", and its location above the bottom of the container.

• Accurately measure the glass diameters, D_3 and D_4 at the bottom and top of the label.

$$A_4 = \pi D_4 - \frac{D_4}{D_2}(A_2 + 2B_2) - 2B_4$$

$$R_3 = \frac{D_3}{D_4 - D_3} \times L_3 \qquad R_4 = R_3 + L_3$$

$$A_3 = \frac{D_3}{D_4}(A_4 + 2B_4) - 2B_3$$

$$\theta_3 = \frac{A_3}{2\pi R_3} \times 360 \qquad \theta_4 = \frac{A_4}{2\pi R_4} \times 360$$

$$C_3 = 2R_3 \sin \tfrac{1}{2}\theta_3 \qquad C_4 = 2R_4 \sin \tfrac{1}{2}\theta_4$$

World's Largest Manufacturer of high-speed Labeling Machinery

WORLD LABELERS

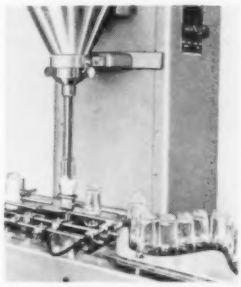
ECONOMIC MACHINERY COMPANY • Worcester 3, Mass. / Div. of Geo. J. Meyer Manufacturing Co.

coa says. The one-piece aluminum cap has a small button in the center. To expose the sealing medium (usually rubber or Neoprene) for injection of a syringe needle, the button is pressed with the thumb and breaks loose from the cap. Tamperproof, the cap can be opened only by pressing the button. First production caps are sized for 13-mm. glass packages.

Circle No. 17

● Dry Product Filler

Food Machinery and Chemical Corp.'s Stokes & Smith Plant has introduced a new automatic universal filler, Model

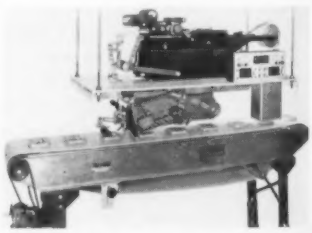


EG-6. Three different filling methods are offered with quick changeover from one method to another to fill cans, jars, cartons, bottles, and boxes. A serpentine feed conveyor handles odd and unusual shaped containers. It runs at speeds up to 50/min. and handles containers ranging in size from 1 x 1 x ½ in. up to 4½ x 4½ x 8 in. The three filling methods include adjustable cam volumetric, volumetric packing, and vacuum volumetric. Interchangeable augers, simplified controls, and accessible mechanical adjustments reduce changeover time to the minimum, FMC says.

Circle No. 18

● Label Printer, Applicator

The Monarch Marking System Co. is making equipment to imprint and apply labels. Its principal component



is the Tickopres imprinting machine which feeds labels, in roll form, preprinted with information that remains constant and also imprints (by changeable rubber plates or movable type) variable information on the label, such as product, contents, weight, date code, etc. The roll of labels is then fed through a device that peels the protective backing from pressure-sensitive labels and automatically ap-

Circle No. 278 on Card, Page 119 ▶

YOU'VE GOT A SAFE BET WITH CELLOPHANE

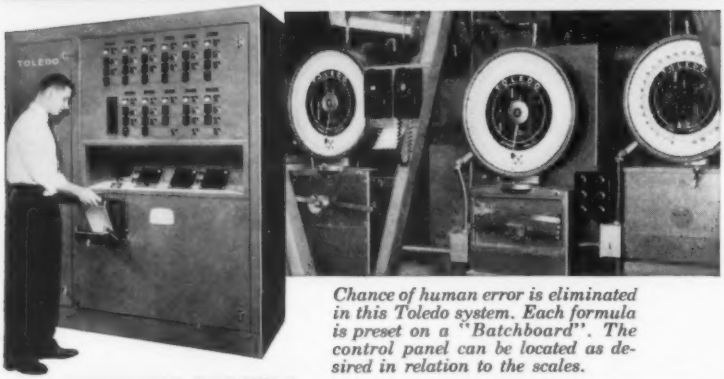
Did you know that one standard roll of Olin Cellophane 9½" OD will give you almost one mile of risk-free packaging material? For example, cellophane can be sealed at a wide range of temperatures, (roughly from 350° to 500°) and still assure strong, positive heat seals. In addition, its uniformity of gauge runs about plus or minus 5% which further guarantees consistency of heat seals. What does this mean to you? Fewer headaches, greater packaging efficiency and lower packaging production costs. Check around. You'll find that no other flexible packaging material can come close to cellophane's trouble-free packaging production record. Call in an Olin Cellophane representative or converter today.

Olin CELLOPHANE

OLIN MATHIESON
Packaging Division
655 Madison Avenue, New York 21, N. Y.

TOLEDO Reports on Automatic Weighing

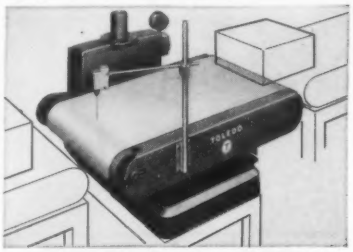
★ NEW IDEAS FOR COST-SAVING



Chance of human error is eliminated in this Toledo system. Each formula is preset on a "Batchboard". The control panel can be located as desired in relation to the scales.

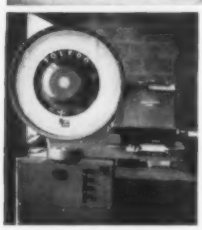
AUTOMATIC BATCHING

Operator at convenient remote location has full command of a multiple scale batching system with Toledo Remocon. As many formulas as required are pre-set on "Batchboards" and inserted into panel. This is one of several types of Toledo remote-control batching systems for today's needs, including punch card, "Formulaplug" and digital scanner. Ask for Bulletin 2964.



CHECKWEIGHS IN-MOTION

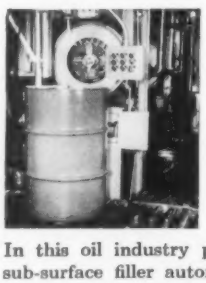
Many plants today are putting Toledo Automatic Checkweighers into their conveyor lines. Models to provide continuous, 100% in-line checkweighing of items from a few ounces to 200 pounds. Motorized belt. Handle sacks, cartons, packages, pieces, parts. Ask for Bulletin 2968.



LOAD CELL DIAL DOES TRIPLE DUTY

. . . ALSO PRINTWEIGH RECORDING

One remote dial serves *three* platforms in this Toledo Electronic Load Cell Scale for truck weighing at a large cement plant. With a truck on three platforms, scale reads individual axle loads or total weight. Equipped with Printweigh "400" to print full figure weight data. Brings new versatility to weighing. Request Bulletin 2970.



AUTOMATES DRUM-FILLING

In this oil industry plant, a Toledo sub-surface filler automatically eliminates foaming and controls drum filling. The scale is keyed into conveyorized system . . . provides faster, more accurate filling. Saves time, labor, avoids loss of material and customer goodwill. One of many operations where Toledo controls guard costs. Ask for Bulletin 9030.

●

WRITE TODAY for specialized help from our Custom Products Division, or contact the Toledo Office near you, to solve your problems in batching, checkweighing, drum-filling, load cell applications. TOLEDO SCALE, Division of Toledo Scale Corporation, Toledo 12, Ohio.

(Toledo Scale Co. of Canada, Ltd., Windsor, Ont.)

SERVICE Factory-Trained 360 Cities

TOLEDO®

Headquarters for Weighing Systems

plies them on the package as it is being fed by the conveyor.

Circle No. 19

● Foam Sheet With Adhesive

Morgan Adhesives Co. announces the development of Mactac self-adhesive polyurethane foam in sheet form. It

is available in graduated sizes from ⅛ to 4 in. thick. The material will bond itself to either porous or smooth surfaces and is suggested for use as cushioning, padding, or packaging. It has an elastic property in application of 30 per cent stretch in length and 5 per cent in width, according to Morgan. The adhesive is applied to the back of the sheet of foam and is protected by release paper for quick application. The maker says that the adhesive flows into the pores of a rough surface, assuring a uniform bond.

Circle No. 20

● Small Capacity Balance

The Exact Weight Scale Co. has a new Series K line of general purpose high-speed precision balances de-

signed for small capacity weighing operations. To minimize error, these balances indicate readings with a sharp, shadow-edge light projection on a large, direct-reading, illuminated dial, according to the producer. Weighing pans are available in stainless steel and plastic designs. A user positions the built-in mechanical weights on the beam by dialing the desired weight and a magnetic damping device speeds weighing, Exact Weight says. A built-in taring device

LABEL
up to 75 units a minute with "SCOTCH" BRAND Tapes

In the time it takes you to read this sentence, the "SCOTCH" BRAND *S-601 Flat Surface Applicator can label nine packages. That's 3M-Matic Taping in action.*

See how this "SCOTCH" BRAND Flat Surface Applicator can speed up your packaging operation. It labels automatically up to 75 units a minute with any length of tape. Can be adapted to index and register printed tapes precisely, and at the same high production speeds. Tapes stick tightly, never smear, are supplied in a variety of vivid colors.

For manual taping applications, adjustable definite length dispensers are also available to speed rapid hand application of tape.

What's your labeling problem? Boxes . . . cans . . . bottles . . . tubes? Chances are your 3M Representative can solve it for you. Ask your local "SCOTCH" BRAND Tape Distributor for more information or write: 3M Co., 900 Bush Ave., St. Paul 6, Minn.

When tape costs so little, why take less than "SCOTCH" BRAND?

SCOTCH BRAND
Tapes for Packaging

MINNESOTA MINING AND MANUFACTURING COMPANY
. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

"SCOTCH" IS A REGISTERED TRADEMARK OF 3M CO. ST. PAUL 6, MINN. EXPORT: 99 PARK AVE., NEW YORK 16. CANADA: LONDON, ONTARIO.

is available to allow for deducting the weight of empty containers from the gross weight.

Circle No. 21

● Push-Up Package

American Can Co. has a new "push-and-serve" consumer package for ice cream. The bottom of this tubular package is a movable plastic disc that is pushed up to expose the contents which can then be sliced off in servings of any size. The container is of paperboard with a metal cover-all lid. It is lined with foam plastic for insulation and to enable the roll of ice cream to be easily pushed out of the tube.

Circle No. 22

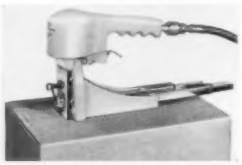
● Lid Closure Machine

Anaconda Aluminum Co.'s Cochrane Equipment & Supply Co. container div. announces a new continuous feed, lid closure machine for large volume, high speed folding and crimping of aluminum foil rigid containers. Model 3-B operates at speeds of 30 closures/min. to a maximum of 110. The unit may be used to close containers such as those with a regular edge vertical flange, interrupted vertical curl, curled edge with round and rectangular foil hood lid, and beaded with hood lid. The basic machine is manually loaded with pre-lidded containers but it may be fitted for fully automatic operation. A positive gear action maintains the proper timing cycle for an uninterrupted operation.

Circle No. 23

● Portable Box Stapler

International Staple & Machine Co. has redesigned its air operated, portable Air Boxer stapling machine for



closing boxes after they are filled. It has a cycle-through air system utilizing an all-aluminum body shell and cylinder housing and weighs 6½ lb. The magazine holds 100 staples and features a full floating, removable channel and the trigger and handle are contour-formed to fit the hand. Boxes can be closed at the rate of up to 200/hr. with the new unit.

Circle No. 24

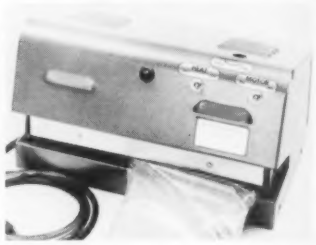
● Automatic Weigher

The Olofsson Corp. is marketing a new weigher which delivers a finished charge at speeds up to 70/min. A finished charge is delivered each 12 revolutions of the input drive shaft. The weigher has an accuracy of 1/20 oz., according to the maker. It has eight scales fitted in a "merry-go-round" under a single variable feedback control. The entire operation is automatic, Olofsson says, and the unit can handle any free flow or semi-flow product from ¾ up to 20 oz.

Circle No. 25

● Bag Sealer

Bag-O-Matic Packaging Equipment Co. has a new version of its automatic recycling polyethylene heat sealer.



This machine is solid cast aluminum with an automatic safety slip clutch to prevent locking and it permits flap-over sealing of packages up to ⅝ in. thick. The unit is made in widths of 12 and 18 in. The air-cooled fan motor, with sealed bearings, provides continuous up and down motion at a speed of 25 cycles/min. Two bags may be sealed at one time at speeds of 3000 bags/hr. It seals polyethylene and Pliofilm bags up to 8 mil thick.

Circle No. 26

● Steel Drum Locking Ring

Inland Steel Container Co. is producing a new bolt-type locking ring and redesigned drum cover for 55 gal. steel drums. The shipping container conforms to Interstate Commerce Commission specification 17H, covering the transporation of certain dangerous materials. The locking ring is reinforced by heavy forged lugs which grip the entire contour of the ring, holding the cover in place under severe impact. Drum cover modifications include a circumferential bead for additional resistance to stress and a slightly deeper skirt, Inland says.

Circle No. 27

● Glass Container Coating

Ball Brothers Co., Inc. has developed a new coating, AP (abrasion protection), for glass containers. No special adhesives are required and during tests, the coated jars were subjected to retort temperatures of 240 degrees F. for 40 min. without adverse effect on the protective qualities of the coating, Ball says. Among the advantages cited by the producer for this product are durability of surface protection and being unaffected by such things as alcohol, beer, and household bleach.

Circle No. 28

(End)

ABSOLUTELY ACCURATE 2 VALVE FILLER

Elgin EARNS ITS WAY

"TWIN"

The Perfect Filler for Glass, Plastic and Tin containers. Accurate Ingredient Fill for Aerosol Packing

The Elgin "Twin" is a rapid, faultless producer. This Filler features a unique method for controlling the piston stroke, resulting in two speeds: high-speed on cylinder filling, low-speed on container filling. Easily adapted to a broad range of products and container sizes, the Elgin "Twin" insures an accuracy of fill you can rely on for either liquid or viscous products. Easily cleaned —ideal for light or heavy packs and ideal for aerosol packing—the Elgin "Twin" earns its way in labor and product savings!

PACKAGING MACHINERY MANUFACTURERS INSTITUTE PMMI MEMBER

Write for complete literature

ELGIN MANUFACTURING COMPANY
200 BROOK STREET,
ELGIN 1, ILLINOIS

Dobeckmun polyethylene bags provide the showcase for a family of quality sponges produced and sold by the Burgess Cellulose Company, Freeport, Illinois. DOBECKMUN polyethylene keeps the sponges soft and pliable by holding moisture inside the bag—at the same time lets customers "feel" the sponge without soiling or damage.

packages for performance

DOBECKMUN

Dobeckmun custom polyethylene bags have helped hundreds of products capture the feeling of special goodness so important to modern merchandising strategy. Vital to their effectiveness is Dobeckmun design and printing skill that creates the fresh, clean image that lends a mark of quality and endows with saleability. Put DOBECKMUN packaging skills to work for your product, with packages for performance from THE DOBECKMUN COMPANY, A Division of The Dow Chemical Company, Cleveland 1, Ohio • Berkeley 10, California • Offices in most principal cities.

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Circle No. 102

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Circle No. 106

Package Cushioning

The B. F. Goodrich Co., in a 14-page brochure, discusses factors to be considered in package cushioning problems. Consideration is given to cause and prevention damage, compression resistance, efficiency, cushion factors, drift, set, dusting, etc. The company's Texlite (rubberized hair) and urethane foam are also described. Properties and uses are given for them along with general means of designing and selecting the proper cushion.

Circle No. 107

Gravity Filler

The Pfaudler Co., div. of Pfaudler Permutit Inc. has a new bulletin available which describes its line of gravity fillers. The fillers are designed for the packaging of free-flowing liquids and units are available with either 9, 12, 14, 18, or 24 filling stations. In addition to the descriptive text, photos, schematic drawings, and cutaway views, a new filling-speed chart is provided which gives recommended filling speeds for each model and can size.

Circle No. 108

Metal Stay Boxes

The Cincinnati Box and Partition Co. offers an illustrated brochure describing production efficiencies which might be obtained by using its materials handling trays, boxes, and drawers. A variety of designs are shown to facilitate handling of small parts, electronic components, pharmaceuticals, toys, and foods.

Circle No. 109

Bottle Labeling Machine

MRM Co., Inc. offers a 4-page folder providing operating principles and specifications for its Model CM, a continuous-motion automatic bottle labeling machine. It handles a variety of sizes from "postage stamp" spot labels to wrap-around labels measuring 6x7 in. This machine can be adapted to a wide range of container sizes and shapes.

Circle No. 110

Plastic Contour Packaging

Erdco Engineering Co. has available a data sheet on its plastic bubble sealing machine, Clear-Pak Jr. Designed for fast production of short run items, it has a sealing area of up to 6x9 in. and requires only one unskilled operator. Items can be sealed at a rate of one every 3 sec.

Circle No. 111

Little Packaging Library

Hinde and Dauch Div., West Virginia Pulp and Paper Co. has published a series of 12 booklets about corrugated packaging. This "Little Packaging Library" includes information on how to seal, stack and load, merchandise, save labor costs, ship more economically, ship by air, specify, use printing, prepack, select display stands, test, and ship heavy products in corrugated boxes.

Circle No. 112

Bag Packer

Raymond Bag Corp. has available an illustrated pamphlet on its Rotomatic Packer. The unit automatically packages free-flowing materials in open mouth multiwall bags. No outside source of power is required because it is operated by gravity and the material being packaged activates all

aging equipment designed especially for the food industry. Included are dispensers, conveyors, sealers, code daters, and shrink tunnels.

Circle No. 126

■ Strapping Tape

Johns-Manville Corp., Dutch Brand Div. has literature available on its new rayon reinforced acetate strapping tape for materials handling and heavy packaging. Suggestions are given for its use in packaging, palletizing, and bundling. It may be used on irregular shapes and contours, corners, and sharp edges.

Circle No. 127

■ Wrapping Machine

Battle Creek Packaging Machines, Inc. has a data sheet on its Model FW-35 wrapping machine. Described as a high-speed wrapper, machine has automated controls, thermostatic heat controls, and either straight-away feed or right-angle feed.

Circle No. 128

■ Testing Instruments

E. J. Cady & Company offers a new brochure describing and illustrating thickness micrometers, burst strength testers and basis weight scales. These instruments are designed for testing or comparing the various physical and mechanical properties of papers, films, foils, boards, tissues and other sheet materials requiring accurate measurement, strength, or weight data. Price list included.

Circle No. 129

■ Polystyrene Sealing

G. T. Schjeldahl Co. has a leaflet on its new automatic heat-sealing machine that produces an air-tight seal on polystyrene lids and trays. It will handle container sizes up to 9x11x3½ in. and practically any shape. One unskilled operator can seal up to 800 packages/hr.

Circle No. 130

■ Tray Elevator

Lynch Corporation has just released a new booklet titled "Lynch Robo-Lift tray elevator" which describes and illustrates this automatic elevator. Tells how one manufacturer was able to utilize 75 per cent more floor space and avoid costly remodeling through line modification. It is claimed the elevator will not mar or rub carton printing, and can be run up to 15 cartons/min.

Circle No. 131

■ Aerosol Containers

Peerless Tube Company has published an 8-pg. colorful catalogue on Peerasol aluminum aerosol containers, of extruded, one-piece, seamless construction. Containers are 4-oz. and under and the catalogue lists 10 sizes, describing the inside resin coatings and exterior finishes available. Containers may be decorated in one to four-color lithography over a base coat, and further coated with a resistant lacquer for protection against alkalies or acids.

Circle No. 132

■ Packaging Films

Chippewa Plastics Co. has published a 14-pg. booklet containing complete specifications for all standard films, including general films, bread wrap, overwrap and high impact films. Also contains information on packaging and marking specifications, schematic drawings that illustrate roll put-up, charts and formulas for calculating yield and standards for all its films.

Circle No. 133

■ Transducer Types

Electric Regulator Corp. announces availability of a descriptive bulletin, complete specifications and price list on the Regohm Transducer. The 4-pg. booklet offers a series of step-by-step drawings showing how the new unit can change 1/10-in. of mechanical motion into stepless control of up to a quarter-kilowatt of power. Contains simplified 3-step procedure used in selecting correct transducer for a specific application.

Circle No. 134

■ Curing Adhesive

Polymer Industries, Inc. has produced a technical bulletin describing Polybond G-1448, a new curing adhesive that polymerizes to an elestomeric bond. The adhesive is described as being resistant to solvents and boiling water, and is suitable for adhering Mylar and polyethylene. Peel bond strengths obtainable are higher than 1-lb./in. Test samples are available.

Circle No. 135

■ Piston Filler

The Pfaudler Co., has available a bulletin describing the RP-210 ten-station piston filler, designed to operate up to speeds of 300 containers/min. with accuracy of ±0.1 fl. oz. Said to be suited for use with glass, paper, and pre-pack containers. Bulletin contains photos and descriptive material.

Circle No. 136

■ Polyethylene Film

Visking Company offers a 16-pg. illustrated booklet describing the various types and uses of Visqueen polyethylene film. The booklet is titled "Versatile Visqueen Film" and covers the characteristics and applications of the material in the pack-

CARTON BAGGED PRODUCTS FASTER

WITH CECO MODEL 40

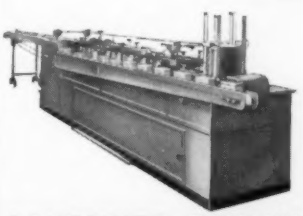
AUTOMATIC CARTONER

- *Handles bagged products at speeds up to 90 per minute.*
- *Changeover from one size to another takes only twenty minutes.*

Here at relatively low cost is the perfect combination of speed and flexibility. With the product inserted manually, the Ceco Model 40 handles a glue seal end carton fully automatically from hoppering through sealing.

The Model 40 can also be had to handle heavy weight board or corrugated as well as tuck style, lock style or, a carton having one glue end and one tuck end. It is ideal for bagged products, bakery products, frozen foods, drug products, hardware, etc. For full details write for a 40 Brochure.

CECO



CONTAINER EQUIPMENT CORPORATION

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Circle No. 106

Package Cushioning

The B. F. Goodrich Co., in a 14-page brochure, discusses factors to be considered in package cushioning problems. Consideration is given to cause and prevention damage, compression resistance, efficiency, cushion factors, drift, set, dusting, etc. The company's Texlite (rubberized hair) and urethane foam are also described. Properties and uses are given for them along with general means of designing and selecting the proper cushion.

Circle No. 107

Gravity Filler

The Pfaudler Co., div. of Pfaudler Permutit Inc. has a new bulletin available which describes its line of gravity fillers. The fillers are designed for the packaging of free-flowing liquids and units are available with either 9, 12, 14, 18, or 24 filling stations. In addition to the descriptive text, photos, schematic drawings, and cutaway views, a new filling-speed chart is provided which gives recommended filling speeds for each model and can size.

Circle No. 108

Metal Stay Boxes

The Cincinnati Box and Partition Co. offers an illustrated brochure describing production efficiencies which might be obtained by using its materials handling trays, boxes, and drawers. A variety of designs are shown to facilitate handling of small parts, electronic components, pharmaceuticals, toys, and foods.

Circle No. 109

Bottle Labeling Machine

MRM Co., Inc. offers a 4-page folder providing operating principles and specifications for its Model CM, a continuous-motion automatic bottle labeling machine. It handles a variety of sizes from "postage stamp" spot labels to wrap-around labels measuring 6x7 in. This machine can be adapted to a wide range of container sizes and shapes.

Circle No. 110

Plastic Contour Packaging

Erdco Engineering Co. has available a data sheet on its plastic bubble sealing machine, Clear-Pak Jr. Designed for fast production of short run items, it has a sealing area of up to 6x9 in. and requires only one unskilled operator. Items can be sealed at a rate of one every 3 sec.

Circle No. 111

Little Packaging Library

Hinde and Dauch Div., West Virginia Pulp and Paper Co. has published a series of 12 booklets about corrugated packaging. This "Little Packaging Library" includes information on how to seal, stack and load, merchandise, save labor costs, ship more economically, ship by air, specify, use printing, prepack, select display stands, test, and ship heavy products in corrugated boxes.

Circle No. 112

Bag Packer

Raymond Bag Corp. has available an illustrated pamphlet on its Rotomatic Packer. The unit automatically packages free-flowing materials in open mouth multiwall bags. No outside source of power is required because it is operated by gravity and the material being packaged activates all

aging equipment designed especially for the food industry. Included are dispensers, conveyors, sealers, code daters, and shrink tunnels.

Circle No. 126

■ Strapping Tape

Johns-Manville Corp., Dutch Brand Div. has literature available on its new rayon reinforced acetate strapping tape for materials handling and heavy packaging. Suggestions are given for its use in packaging, palletizing, and bundling. It may be used on irregular shapes and contours, corners, and sharp edges.

Circle No. 127

■ Wrapping Machine

Battle Creek Packaging Machines, Inc. has a data sheet on its Model FW-35 wrapping machine. Described as a high-speed wrapper, machine has automated controls, thermostatic heat controls, and either straight-away feed or right-angle feed.

Circle No. 128

■ Testing Instruments

E. J. Cady & Company offers a new brochure describing and illustrating thickness micrometers, burst strength testers and basis weight scales. These instruments are designed for testing or comparing the various physical and mechanical properties of papers, films, foils, boards, tissues and other sheet materials requiring accurate measurement, strength, or weight data. Price list included.

Circle No. 129

■ Polystyrene Sealing

G. T. Schjeldahl Co. has a leaflet on its new automatic heat-sealing machine that produces an air-tight seal on polystyrene lids and trays. It will handle container sizes up to 9x11x3½ in. and practically any shape. One unskilled operator can seal up to 800 packages/hr.

Circle No. 130

■ Tray Elevator

Lynch Corporation has just released a new booklet titled "Lynch Robo-Lift tray elevator" which describes and illustrates this automatic elevator. Tells how one manufacturer was able to utilize 75 per cent more floor space and avoid costly remodeling through line modification. It is claimed the elevator will not mar or rub carton printing, and can be run up to 15 cartons/min.

Circle No. 131

■ Aerosol Containers

Peerless Tube Company has published an 8-pg. colorful catalogue on Peerasol aluminum aerosol containers, of extruded, one-piece, seamless construction. Containers are 4-oz. and under and the catalogue lists 10 sizes, describing the inside resin coatings and exterior finishes available. Containers may be decorated in one to four-color lithography over a base coat, and further coated with a resistant lacquer for protection against alkalies or acids.

Circle No. 132

■ Packaging Films

Chippewa Plastics Co. has published a 14-pg. booklet containing complete specifications for all standard films, including general films, bread wrap, overwrap and high impact films. Also contains information on packaging and marking specifications, schematic drawings that illustrate roll put-up, charts and formulas for calculating yield and standards for all its films.

Circle No. 133

■ Transducer Types

Electric Regulator Corp. announces availability of a descriptive bulletin, complete specifications and price list on the Regohm Transducer. The 4-pg. booklet offers a series of step-by-step drawings showing how the new unit can change 1/10-in. of mechanical motion into stepless control of up to a quarter-kilowatt of power. Contains simplified 3-step procedure used in selecting correct transducer for a specific application.

Circle No. 134

■ Curing Adhesive

Polymer Industries, Inc. has produced a technical bulletin describing Polybond G-1448, a new curing adhesive that polymerizes to an elestomeric bond. The adhesive is described as being resistant to solvents and boiling water, and is suitable for adhering Mylar and polyethylene. Peel bond strengths obtainable are higher than 1-lb./in. Test samples are available.

Circle No. 135

■ Piston Filler

The Pfaudler Co., has available a bulletin describing the RP-210 ten-station piston filler, designed to operate up to speeds of 300 containers/min. with accuracy of ±0.1 fl. oz. Said to be suited for use with glass, paper, and pre-pack containers. Bulletin contains photos and descriptive material.

Circle No. 136

■ Polyethylene Film

Visking Company offers a 16-pg. illustrated booklet describing the various types and uses of Visqueen polyethylene film. The booklet is titled "Versatile Visqueen Film" and covers the characteristics and applications of the material in the pack-

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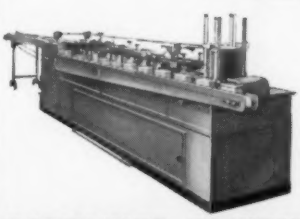

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aging, construction, agriculture and industrial fields.

Circle No. 137

■ Adhesives Manual

Mystik Adhesive Products, Inc., has just published a manual of pressure sensitive products, including industrial tapes, bulk adhesives, coatings, and other pressure sensitive items. Cross indexing helps find the exact product for any job.

Circle No. 138

■ Transparent Packages

J-E Plastics Manufacturing Corp. has published a new 4-pg. illustrated brochure, describing a variety of semi-rigid transparent acetate and polystyrene containers fabricated by it. Included are squares, rectangulars, rounds and ovals, as well as cylinders and cones, half-rounds and variations. Packages are designed to merchandise specialty items such as hosery, jewelry, cosmetics, and notions. There is also a line of packages that offers non-toxic protection to fresh, prepared and frozen foods.

Circle No. 139

■ Weight Fact Kit

Toledo Scale Co. offers a new weight fact kit that is designed to help avoid weighing errors, production bottlenecks, and materials handling inefficiencies. Also to aid in the making of a scale accuracy check.

Circle No. 140

■ Self-Opening Bags

Potdevin Machine Co. has issued a new catalog giving descriptions and specifications of machinery for making supermarket carrier bags, grocery bags, shopping bags, dry wax garbage bags, vacuum cleaner bags, as well as multi-wall and specialty bags for product packaging. Automatic machines handle a range of bag sizes, and may be equipped for sidewise, vertical or drop delivery.

Circle No. 141

■ Aerosol Filling Machines

John R. Nalbach Engr. Co. has data sheets on two new aerosol filling machines. Model 12 GS is a fully automatic gasser and shaker capable of speeds up to 65 cans/min. Model 8 GS is a semi-automatic gasser-shaker which will fill up to 53 cans/min.

Circle No. 142

■ Packaging Adhesives

Union Paste Co. has compiled a list of food packing adhesives which has not been approved by the Food & Drug Administration yet, but because it has every reason to believe that the list will be, under the new Food Additives Amendment of 1958, it is proceeding with the use of these adhesives for food packaging.

Circle No. 143

■ Packaging Machinery

Thiele Packaging Machinery Co. announces the publication of a new, 6-pg., 3-color folder that describes and illustrates its line of packaging machinery. Center fold-out is devoted to information concerning the company's coupon placing machine, carton set-up machine, top sealer, stainless steel conveyor, automatic and semi-automatic case packers, case packer-case sealer, and milk carton inspection and case loading machine.

Circle No. 144

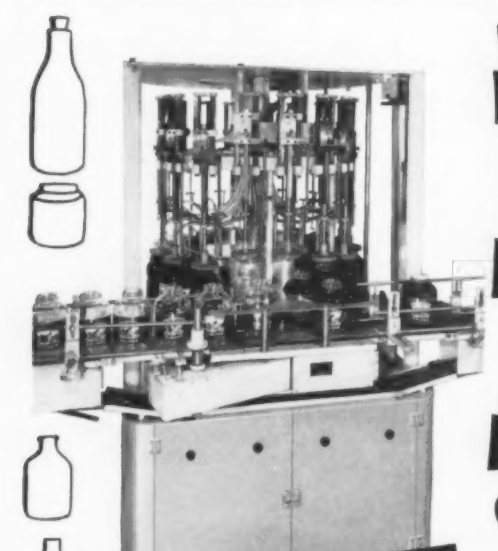
■ Stretchable Paper

Clupak, Inc. offers a folder outlining the advantages of Clupak, a stretchable paper. Also included are some of the current applications, and a description of how the stretchability is built in.

Circle No. 145

■ Package Sterilization

Wilmot Castle Co. is offering a 12-page brochure outlining its complete program on package steriliza-



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tion. Types covered are steam, dry heat, and gas sterilization by inerted ethylene oxide. In addition to discussing how they research a product and package, engineer procedures and direct installations, they also list a number of products normally requiring sterilization and the method generally recommended.

Circle No. 146

■ Cellophane Data

E.I. duPont de Nemours & Co. (Inc.), Film Dept., has available a brochure, No. A-6166, that lists the properties and uses of 30 varieties of cellophane for the packaging requirements of many products. It includes a chart showing the yield, thickness, principal uses, and properties of plain, moistureproof, heat sealing, and polymer-coated films.

Circle No. 147

■ Weighing And Filling Machine

The Trescott Co., Inc. has a bulletin on its Trescomatic machine, which is adaptable for weighing and filling any dry, free, or semifree flowing material, including food, drug, chemical, and hardware products. Most types of containers may be used in weights from 8 oz. to 25 lb. Weights and products can be changed rapidly. The bulletin is illustrated and contains specifications.

Circle No. 148

■ Automatic Capping

Consolidated Packaging Machinery Corp. has a 6-page bulletin illustrating and describing eight different models of automatic capping equipment. Photographs of actual installations and a list of users accompanies the descriptive text and general machine specifications.

Circle No. 149

■ Gummed Tape Tips

Gilman Paper Co. has two folders listing suggestions for getting best results from gummed and reinforced gummed sealing tape.

Circle No. 150

■ Glass Coating

Thatcher Glass Manufacturing Co., Inc., offers an 8-page booklet, "A protective coating for returnable bottles." In addition to a description of Nu-Glas process for production line coating, the booklet discusses the structure and surface of glass and the purpose and types of coatings used.

Circle No. 151

■ Fluted Cushion Trays

Rondo of America, Inc., offers a brochure outlining the characteristics and applications of protective packaging with fluted trays. Made of lightweight paperboard formed into rows of consecutive flutes which serve as nests for fragile products, these trays are available in variety of styles and choice of cover flaps. Designed to cushion against shock, they are suitable for packing electronic tubes, hypodermic needles, ampules, crayons, and so on.

Circle No. 152

■ Petroleum Products Gravity Fillers

Horix Mfg. Co. offers a line of petroleum products gravity fillers in an illustrated brochure. Machines fill motor oil, brake, and cleaning fluids, anti-freeze, etc., in "F" type, sanitary and cone top cans. Low or high speed units are available.

Circle No. 153

■ Pallet Cover Materials

Kennedy Car Liner & Bag Co. offers sample sheets of paper and plastic materials used in fabricating pallet covers for protection against dust, dirt, moisture, water, and pilferage.

Circle No. 154

■ Wrappers And Carton Formers

Package Machinery Co. offers Bulletin 170-11-4, listing 16 models of its equipment for wrapping, bundling, tray and carton forming and closing.

Circle No. 155 (*End*)

SEALTITE "SYNCHROMATIC"
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Note No. 17: Stacking strength of boxes—Part I

By K. Q. Kellicutt,
Engineer, Forest Products Laboratory, Forest Service, U.S. Department of Agriculture, Madison, Wisconsin

Introduction. Compressive strength of columns, tubes, and the finished box has been emphasized throughout this series of notes primarily because of the importance of the stiffness property in a corrugated box. In regular shipments and handling of commodities packaged in corrugated boxes, the compressive strength of the box is important, as it may be required to sustain the load of several similar loaded boxes placed on top of it; or it may be required to protect its contents from end thrust in a truck that stops suddenly, or from forces resulting when freight cars are humped and handled in switching operations.

More important, however, is the *amount of strength* required to resist the crushing loads that are imposed on boxes during prolonged periods of storage in stacks extending upward to sky-high warehouse roofs.

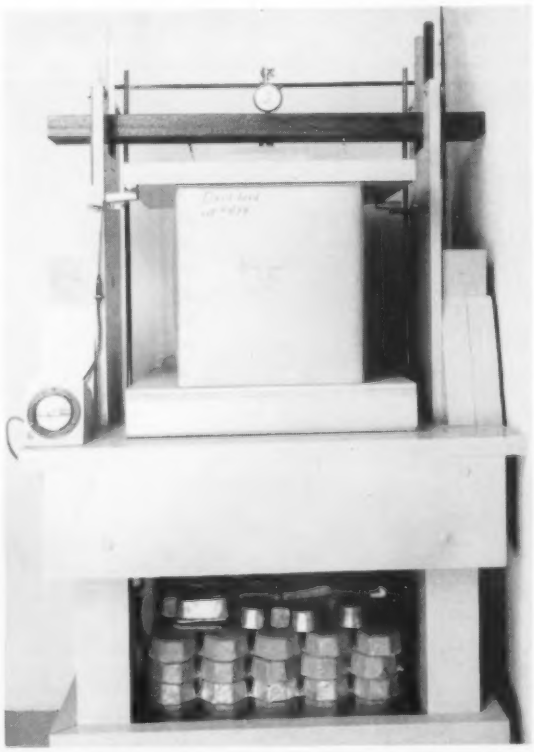
To complicate the storage situation, the several handlings the box may receive prior to being placed in storage have a deleterious effect on its strength; and even moderate increases in moisture content of the boxes during storage may reduce the compressive strength by as much as 50 per cent.

Since the initial work on stacking strength, done at the FPL a decade ago, tests have been continuously in progress. In this note, and a subsequent one, a resumé will be made of the work that has been done on the subject.

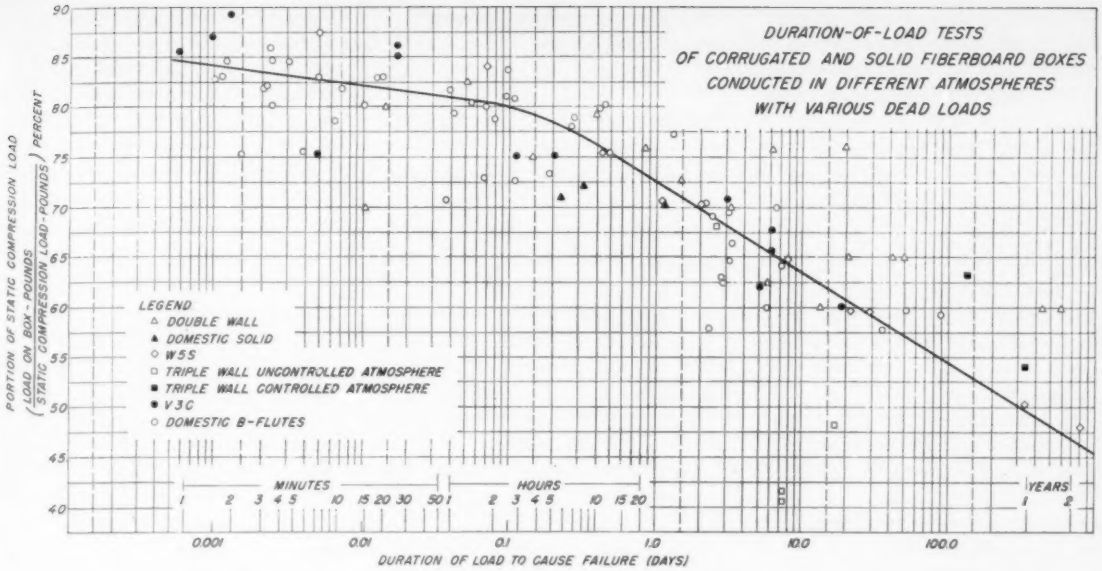
Determination Of Duration Of Load

To determine the duration-of-load information deemed necessary for use as a guide in warehouse stacking operations, long-time loading tests were devised. The tests were made on a variety of kinds of boxes with the apparatus shown in Fig. 1. It is equipped with a time meter, a deflection dial gauge, and an arrangement for applying the dead load to the container through a swivel head on the upper platen.

Containers, whose compressive strength has been determined by testing similar containers in a testing machine, are loaded to a certain percentage of the established machine test load. Through these tests, the relationships between the compressive strength of the container, dead load on the box, and



1 DEAD-LOAD TESTING APPARATUS with box under test. Dial compression gauge is at top directly above steel loading beam from which lead beneath table is suspended. Mercury switches, below platen at diagonally opposite corners, stop timer when box fails.



2 PLOT OF DURATION-OF-LOAD TEST RESULTS for variety of containers made of fibreboard. Note that, with the exception of three tests of multiwall boxes, made in uncontrolled atmospheres, all others are well above curve.

the length of time a box can be expected to sustain the dead load are established.

Periods Of Reaction

In the initial work on the subject,* it was found that the behaviour of the corrugated fibreboard boxes subjected to various dead loads, appears to follow a general pattern that may be described by the reactions during *three* distinct periods of time. The first period, in which there is a rapid compression of the boxes, occurs during the initial application of the load, and starts the instant the load contacts the box. Some of the rapid compression can be attributed to flattening of the rounded portion of the score along the horizontal edges of the box, together with a general leveling of the surfaces.

The rapid compression continues, but at a decreasing rate, for a comparatively short period of a few seconds to 1 to 2 hr., with a rather abrupt transition into the second period. The compression continues during the second period at a uniform, but much slower, rate. It had been observed that in the third period, when the rate of compression again increases, failure is imminent and occurs as compression increases more and more rapidly.

From plottings of compression versus time of each dead-load test, it was found that these *same* three periods *always* exist. They differ from one test to the next only by the amount of compression in the first period, and the length and slope of the linear portion, the second period.

Relationship Of Load To Duration

It became apparent in the early stages of the investigation that, when the dead load was a fairly large percentage of the compression test value of the box, slight changes in the amount of dead load applied to a box changed the duration considerably. It was found that loads of a magnitude of 80 to 90 per cent of the static compressive strength of the box caused failures usually within minutes. However, dead loads that were about 60 per cent of the static compressive strength extended the duration to about a month. Dead loads that were about 50 per cent of the static compressive strength did not cause failure until a year had elapsed.

In the earlier work,* the tests were confined to double-faced, single-wall boxes, and loads were selected for them so that generally the durations did not exceed 90 days. Since that time, some double-wall, triple-wall, and solid fibreboard boxes have been included, and loads have been selected for them to extend the durations beyond the 2-yr. period.

A plotting of these duration-of-load tests may be seen in Fig. 2. The plotting contains the test results of the variety of kinds of boxes previously mentioned.

The curve, which has the same shape and orientation as presented in the initial publication on the subject,* fits two points well in the 1- and 2½-yr. duration areas, and confirms very well the extrapolated portion of the curve in the aforementioned work. It is interesting, however, to notice that, with the exception of three tests of multiwall boxes that were made in

*Kellicutt, K. Q. and Landt, E. F., "Safe stacking life of corrugated boxes," *Fibre Containers*, September, 1951.

uncontrolled atmospheres, the rest are all well above the curve.

This fact indicates that both double-wall and triple-wall corrugated boxes may be capable of supporting dead loads in storage, without failure, that are greater in proportion to their compressive strength than can be supported by solid fibreboard and single-wall corrugated structures. However, before such a conclusion can be made, a greater number of tests are needed and they are currently being made.

A method of applying this duration-of-load information is the subject of the next note. *(End)*

Organize: management of packaging

(Continued from Page 104)

are generally located well up in the organization structure.

If the major emphasis is on product protection, this may mean that they should report directly to the head of manufacturing or the general traffic manager. When both protective and merchandising aspects of the packages are important, the best location for the staff packaging executive may be as an assistant to the executive vice president of the company.

As the importance of the packaging function decreases, with respect to the other activities of the company, the packaging executive's position in the organizational structure becomes lower. When these conditions prevail, the packaging administrator may be located in one of the departments under the director of manufacturing, in the engineering department, or in the purchasing department.

Wherever his location in the organizational structure is, the packaging executive should have, not only the responsibility of carrying out his duties, but also, the necessary authority to perform them efficiently and effectively. *(End)*

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What we think

Sell management on defining packaging responsibilities

Far too many companies fail to set a clear-cut policy on packaging responsibility—with definite accountability for packaging decisions. Likewise, a good many decisions by top management prove almost unworkable by virtue of being based on inadequate knowledge.

The personal relationships of packaging management and container procurement do not get the attention they deserve. These points became abundantly clear during a recent two-day seminar the Gaylord Container people conducted for some of their customers.

Watch out for the human factors

We went to this conference expecting to hear about technical and in-plant use problems of containers or intricate details of procurement specifications. However, discussion soon showed that the technical problems take care of themselves once a company works out the subtleties and intangibles of organizational relationships.

There is little need of repeating the difficulties packaging people often encounter. In some instances, management makes arbitrary decisions concerning container standardization and reduction without consulting the packaging specialists. In others, there is confusion concerning who is responsible for packaging decisions. The fact remains, too, that often there is no clear answer to the question of just whose approval is required for a particular package.

But all this was no gripe session. It was encouraging to note the ability of these packaging and purchasing people to analyze their own problems. We noted definite interest on the point of a packaging specialist taking the initiative in selling his program to top management as well as to other departments of his company.

"We have to make our own place on the organization chart," one expert told his audience. "We have to sell our work and prove ourselves," he noted. His assertions suggest that accomplishing these objectives demands a major educational effort by the company's packaging specialists.

The packaging man or packaging team needs to launch an internal analysis of its own specific packaging problems. If there is no clear-cut policy on packaging responsibility and general lack of coordination between departments, it is evident somebody hasn't gotten the word through. Such an analysis leads to getting management support.

Obviously, a packaging man should not burden top management with the minutiae of his job. But at the same time, it is important that these people receive adequate grounding in (1) enough of the technicalities so that they understand the problems, and (2) a clear appreciation of just how much time is necessary in which to complete a packaging project.

Without enlightened and understanding top management support, no packaging man, however qualified, can carry out an effective program of either preplanning or planning and execution of, say, a program to cut container costs by getting better protection for the same price or comparable protection for less money.

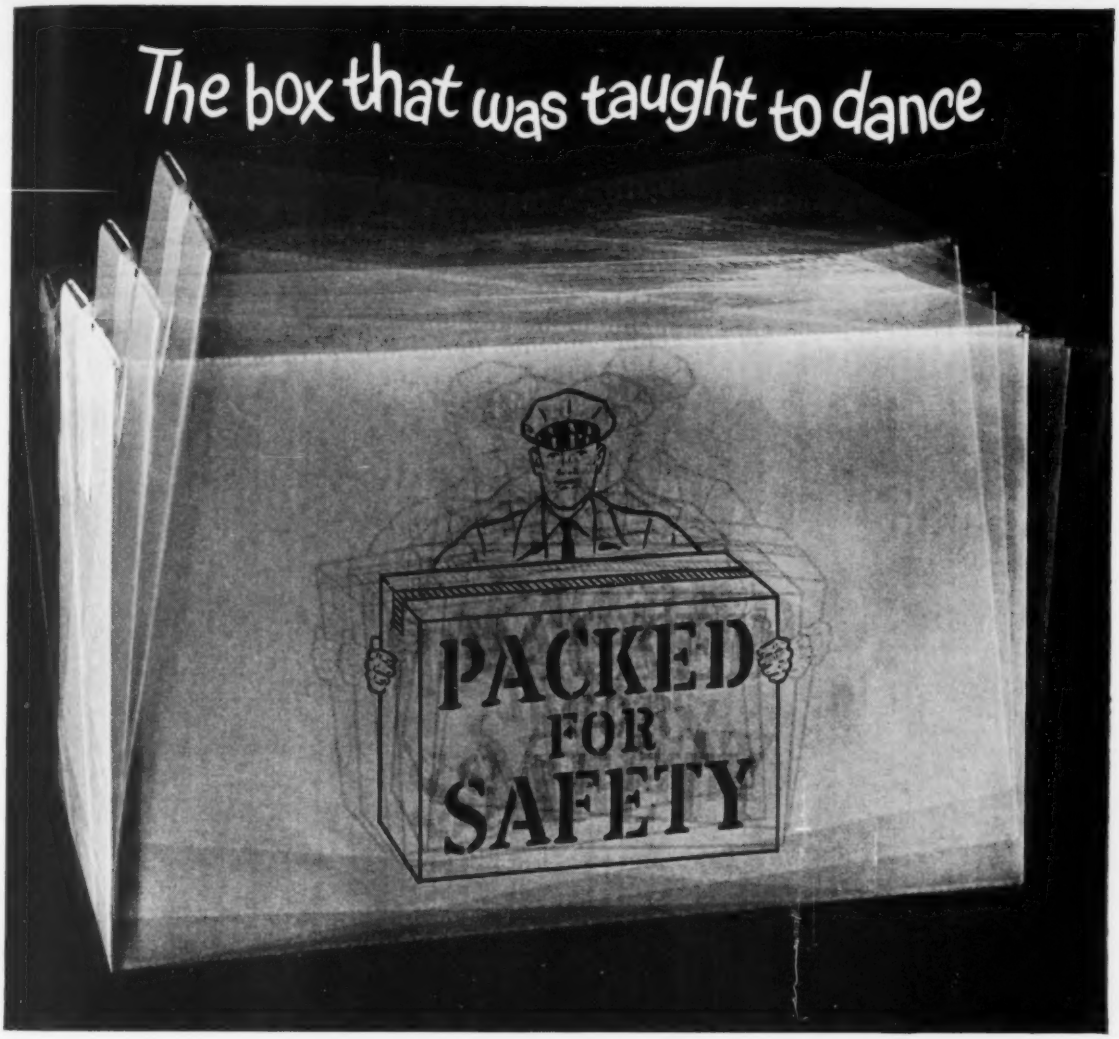
We must take initiative, inform top management

If top management goes off on what the lawyers call a "frolic and detour" of its own on some ill-advised packaging effort, the packaging people, more than likely, have only themselves to blame. If unsuccessful in getting their story across, they need to try all the harder.

When a bunch of hard-headed container buyers, thoroughly oriented in the day-to-day realities of package procurement and use, spend valuable seminar hours talking about the importance of selling a program to management, the conclusion is inescapable that others should go and do likewise. It is time that we "hard sell" packaging to top management—and see that it grasps what we are talking about.

Bruce Hoffman

Editor



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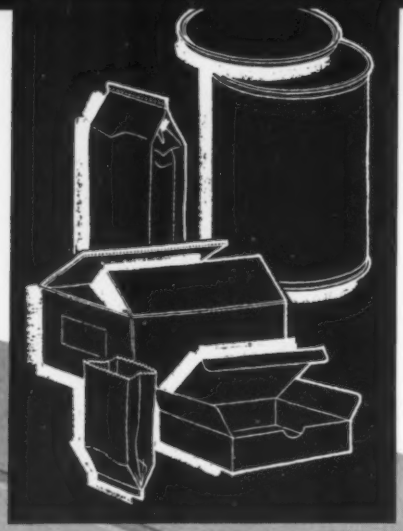

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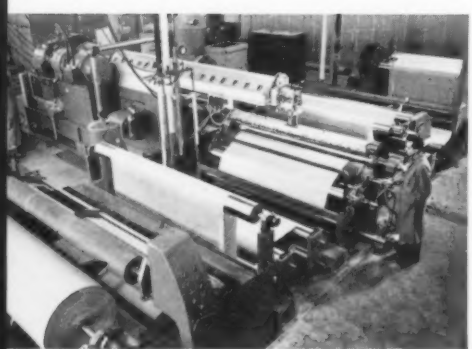

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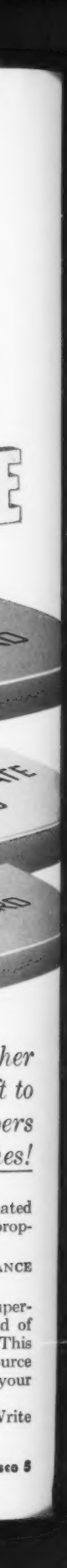

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